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Vol. XXIII. No. 3

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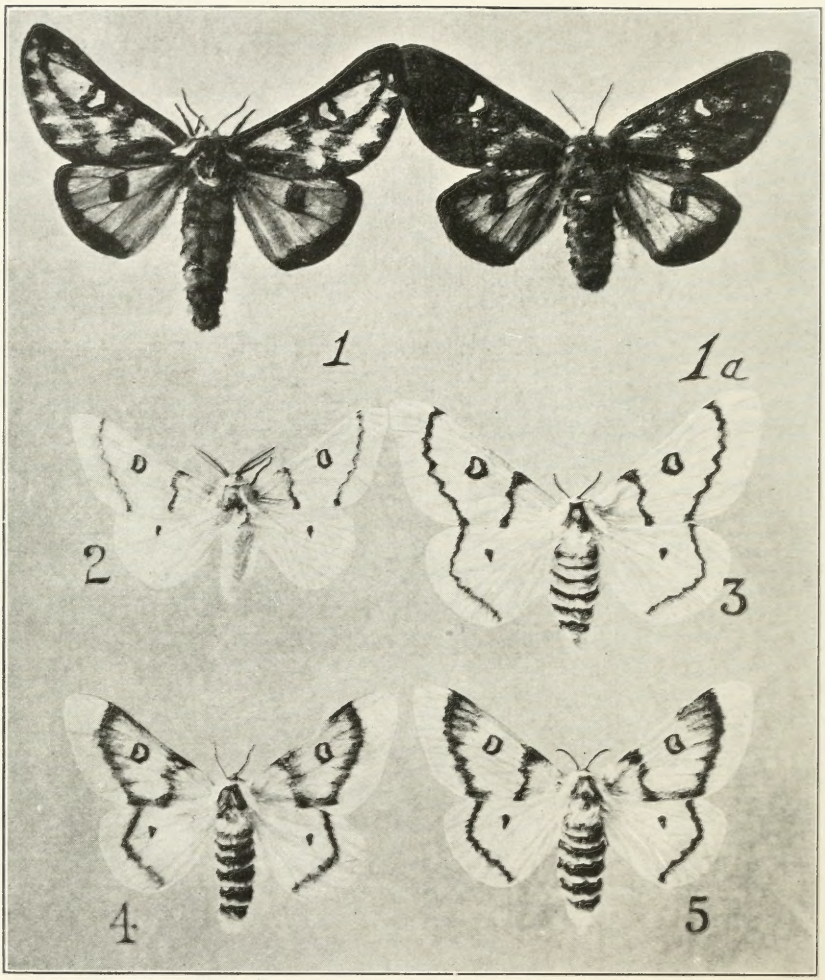

WATSON.

Fig. 1.—*Hemileuca electra*, ♀.
" 1a " ab. *rickseckeri*, n. ab., ♀.
" 2 " *burnsi*, ♂.
" 3 " " ♀.
" 4 " " ab. *conjuncta*, n. ab., ♀.
" 5 " " asymmetrical, ♀.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXIII. MARCH, 1912. No. 3.

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Some New Forms of North American Saturnidae, Genus Hemileuca (Lepid.).

By J. HENRY WATSON, Withington, Manchester, England.

(Plate VII.)

Hemileuca electra ab. **rickseckeri** n. ab. ♀. (Plate VII, Fig. 1a.)

Forewing above wholly jet black except for the discal spot, a faint diffused white streak widening from base to half way up the cell and a faint diffused whitish spot on hind margin divided by the submedian nervure. The nervures submarginally pencilled with the faintest possible traces of white. Hindwing above with the costal margin heavily outlined with black extending to the large oblong black discal spot which has a distinct transparent line within. Outer margin heavily outlined with black which runs up the nervures as far as the discal spot.

Both wings below have the costa and outer margins broadly suffused with black. No apical white suffusion. Body less heavily banded with white below.

Hab.:—San Diego, California.

Type:—One ♀. Coll: J. H. Watson.

Hemileuca burnsi ab. **conjuncta** n. ab. (Plate VII, Fig. 4.)

Differs from typical *burnsi* in having the hinder ends of the apical and transverse black bands of forewings joined together by a distinct black line running along the hind margin. The nervures outlined with black form the apical band towards the discal spot.

Hab.: Reno, Nevada. Two ♀ specimens ex pupae. One in my own and one in Mr. Fred Burns' Coll.

A number of specimens of *H. burnsi* have hatched out asymmetrically; in fact I know no insect which has thrown so many erratic specimens in which the wings of one side are oddly marked. One curious female specimen has the right half as in the female of ab. *conjuncta* and the left one as in the normal female with the addition of a patch of black scales between the discal spot and the submarginal band. More heavily marked on the nervures.

The hybernated pupae from last season commenced to hatch with two days of this year's brood, though here in the north of England, they must have been subjected to very diverse temperatures from those in Nevada.

Hetaerina titia and tricolor (Dragonflies—Odonata).

By E. B. Williamson, Bluffton, Indiana.

A specimen from the Wabash River near Bluffton, Indiana, compared with a specimen from Wister, Oklahoma, has colored areas of wings more extensive; there is more brown in the membrane of the fore wing in the colored area (in both cases brown is anterior to A for the full length of the colored area and, distal to the quadrangle, extends across the full width of the colored area but it is evident only on close examination, because it does not extend beyond the area of pink veins); in the hind wings the colored area is about the same in extent and shape in the two specimens, excepting that in the Indiana specimen the distal prolongation of the brown area toward the nodus is carried farther (3.5 mm. distant in Wister specimen, 3 mm. in Indiana specimen).

In the case of the Wister specimen, however, the body colors are distinctly and conspicuously darker, having metallic reflections, compared with the dull black of the Indiana specimen. The humeral stripes, strongly evident in the latter, are not represented at all in the Wister specimen; and the exten-

sive posterior and ventral pale thoracic areas of the Indiana specimen are represented in the other by a uniform black, with two very narrow pale lateral stripes. The mouth parts and bases of the legs in the Wister specimen are black and without markings, while they are varied with yellow in the other. The abdomen is also much darker, and without trace of markings in the Wister specimen.

The above described Wister specimen has the most reduced colored wing areas of any specimens seen from this locality. From this extent of color areas a continuous series is shown up to an extent corresponding about to Calvert's fig. 5, plate 3, Biol. Centr. Am. Neur.—that is, with the pale area of hind wing measuring about 7 mm. in length. As mentioned above, brown membrane exists in the front wing at least anterior to A and across the wing distal to the quadrangle. Where these areas of brown membrane show red or reddish, it is due to the veins and membrane immediately adjoining them. Hence the enclosure distally of the red area of the front wing by brown introduces no new character in the wing, but is merely an extension of the brown area there, as in the hind wing, beyond the area of red veins. In those specimens showing maximum development of brown beyond the red areas occurs the maximum development of brown membrane within the red areas, and, in the front wings, the area posterior to A and proximal to the distal end of the quadrangle may be invaded.

Two males from Clifton, Texas, are fairly intermediate in body markings between the Indiana and Wister, Oklahoma, specimens. Compared with two males, one from Tennessee, the other from Pennsylvania, they are smaller, darker and with more extensive colored areas on the wings. Six males from Black Bayou,* Texas, are similar to the Clifton males, and indicate that, to a certain degree at least, the extent of black laterally on the thorax is determined by age as well as by habitat. For example, a teneral male from Black Bayou suggests a fully matured male from Pennsylvania.

* Near Victoria, where St. L. B. and Mex. R. R. crosses the Guadalupe River.

In eighteen males from Wister only five show any extension of color on the hind wings distal to the nodus, and only one of these has the color carried across in a mass of color occupying approximately the wing breadth; in the others the nodus is attained by a narrow prolongation of color along the anterior edge of the wing. All these eighteen show the body colors of *titia*. Ten of the eighteen have the brown area conspicuous beyond the red in the front wing, though, as explained before, it exists in all and becomes conspicuous or evident with the extension of brown distally beginning a few cells beyond the quadrangle where the pink veins cease. Of these eighteen males, five, as stated, have the brown area of hind wing reaching the nodus, and one, as described, has the brown area separated from the nodus by about 3.5 mm.; the others vary in this particular from about 1—3 mm. The brown areas on the wing apices vary but little, the darkest wings apparently having the largest spots, but these differences being within narrow limits. Nothing approaching the condition shown in Calvert's fig. 7 and following, plate 3, Biol. Centr. Am. Neur. is represented. The largest spot begins slightly proximal to the stigma, others begin about the level of the promixal end, while the majority are still more reduced. Variations in the stigma are conspicuous, but meaningless, so far as I can tell.

In addition to the above mentioned material seven males from the Cumberland River, near Nashville, two males from the Clinch River, Tennessee, three males from Brookville, Indiana, and three males from Ohio Pyle, Pennsylvania, have been studied. In these the dark color of the hind wings in its posterior portion terminates at the distal end of the quadrangle; in its anterior portion it terminates at the same level in five males from Tennessee and two from Brookville, Indiana; in four males from Tennessee, one male from Brookville, Indiana, and three males from Ohio Pyle, Pennsylvania, there is a more or less distinct distal prolongation of color along the anterior edge of the wing toward the nodus.

A comparison of females from Texas and Tennessee fails to show any noteworthy differences.

A comparison of the eighteen Wister males shows that in wing color they fall, with one exception, between Calvert's figures 1 and 2, plate 3, Biol. Centr. Am. Neur. Figure 1 is *tricolor,* figure 2 is *titia.* The exception noted is clearly *titia* in wing markings (corresponding closely with fig. 5, *loc. cit.*) and body markings. The Wister specimens are unquestionably specifically identical, and I believe, supply the gap which Dr. Calvert expected would be discovered, showing that "*tricolor* is but the other extreme of the series in which *H. bipartita* and *H. titia* are terms" (Biol. Centr. Am. Neur., p. 32).

My conclusions are that in the United States one variable species, hitherto known as *Hetaerina titia* and *H. tricolor* exists; that the northern examples are larger and paler colored both as regards bodies and wings; that in any locality within this area where the species occurs, specimens representing the average forms of widely separated localities may be taken; that a large series of specimens from a southern locality will show more variation than a similar large series of specimens from a more northern locality; and that under these conditions it is useless to attempt to designate more than one entity by any device of nomenclature. The species will be *Hetaerina titia* Drury.

I have collected large numbers of both these nominal species in Guatemala, but none of this material is available for study at this time. I am sure, however, that specimens of *titia* collected at Los Amates, in June, 1909, will show a greater variation of wing markings within the old definitions of *titia* than the Wister specimens show within the old definitions of the wings of *tricolor.* The Wister specimens will show more variation, however, than series from either Indiana or Pennsylvania.

Rice Growing and Malaria.—Dr. C. P. Kennard traces the connection between the annual increase of cases of human malaria and the rice harvest in British Guiana to the increased opportunities for the breeding of *Anopheles* larvae in the small pools of water left by draining the fields in order to cut the grain. (*Journ. Royal Agric. and Commerc. Soc. Brit. Guiana,* Dec., 1911).

At the Ceanothus in Virginia.

By NATHAN BANKS, East Falls Church, Virginia.

If ever there is a proposition for the adoption of an entomologist's flower, I shall vote early and often for *Ceanothus*. In June, that month of profusion of bloom, *Ceanothus* is the most attractive enchanter of insect life. Its fragrance calls and calls till around the white head of blossom there is an encircling halo of admirers such as no flower in this vicinity may boast. Bee and fly and beetle follow the enthralling odor until they rest on that bed of white. The burly bumble-bee and the handsome longicorn, the fiery wasps and sharp-clawed Scarabaeids mingle with tiny beetles, delicate crane-flies and other Diptera to feast on this bounteous hoard. The vicious robber-flies hover about, the *Phymata* lurks in the flower, and many another predaceous insect here finds an abundance of food.

Each year as the bright warm days of mid-June come around I have taken a few days from my work to gather those insects that have answered the call of *Ceanothus*. To stand 'neath the broiling sun and watch this mazy whirl of restless insect life; to hear the hum of a hundred tiny wings, mingled with the sharper buzz of certain species; to easily and stealthily push one's way through the bushes, glancing anxiously here or there for something new, with net in hand a-tremble for a lightning stroke; these are the pleasures of *Ceanothus* collecting that bear pleasant memories on many a wintry day. Those specimens bearing the little label "Ceanothus" will always have a charm for me unequalled by the curious structures of many a more wondrous species.

There is great variation in the class of insect visitors according to the environment of the flowers. At a patch near woodlands where there were many dead trees, a considerable variety of Longicorns were always obtainable; at another patch in an open meadow few Longicorns were ever found. Some days insects were scarce when one could not tell why, the next day they might be abundant. A cloudy or clear sky, and the amount

of wind makes a great difference in the number of bees and flies, and a high degree of humidity lessens the abundance of insects, especially flies. Yet a hot spell after a mid-day shower has several times brought out a host of species, where before the shower there were but comparatively few visitors. The Hymenoptera are usually at their best from 11 till 2, the flies are often abundant till 5 or 6, while the small crane-flies and mosquitoes occur at twilight.

In this vicinity the *Ceanothus* usually begins to bloom before the 15th of June, and commonly there is little left by the Fourth of July; but each season has its peculiarities, and the location and exposure make much difference.

The list, as one will readily see, contains an abundance of common forms, but also many species that are considered rare. Some insects recorded, doubtless just happened to be there, but others, even parasitic and phytophagous species, seem to love to be in a crowd, and were captured on various occasions although there is apparently no reason for their visiting the flowers. The greatest variety of forms is among the Hymenoptera, the beetles come next, and then the flies. Bees form the great bulk of the Hymenoptera, and several species were often present in hundreds of specimens. For the names of these and some other Hymenoptera I am much indebted to Prof. T. D. A. Cockerell, and to Messrs. Crawford, Viereck, Rohwer, Lovell, and Swenk. Mr. Schwarz has kindly determined the Coleoptera. I have not listed the Lepidoptera; they are comparatively few in numbers, although a *Thyris* was sometimes fairly common.

The insect visitors of *Ceanothus* in Illinois have been recorded by Mr. Robertson in the Botanical Gazette, vol. XX; he obtained 48 Hymenoptera, 45 Diptera, 13 Coleoptera, 4 Hemiptera, and 2 Lepidoptera, all on the flowers. Mr. Hopping has given (Entom. News, 1899, pp. 162-5) a list of the beetles found on *Ceanothus* in California, 56 species; and Mr. Morris (Can. Entom. 1909, pp. 416-417) writes of Coleoptera taken on *Ceanothus* in Canada, only a few mentioned by name. There are many isolated records in various lists, while a considerable number are to be found in Smith's List of New Jersey insects.

Of the rare and unusual species one may note in the Hemiptera *Mineus strigipes, Lygaeus turcicus* often confounded with *L. kalmii; Phymata pennsylvanica,* and *Rhinocapsus vanduzeei.*

In the Coleoptera, the *Trichodes* was quite abundant at certain patches, and has doubtless been mistaken for *T. apivorus; Strangalia bicolor,* more apt to be on wild roses; *Eupogonius subarmatus,* very rare here; and *Griburius scutellaris.* The most common beetle was *Chauliognathus,* but there are always hosts of the small Mordellas and *Centrinus picumnus, Macratria murina, Lappus sturmi, Mycterus scaber* and *Isomira sericea* were always abundant. Eleven species of Cerambycidae have been taken at one patch of flowers in less than an hour.

Of the bees the *Viereckella ceanothi* is the best find, nine specimens were taken one day. The *Anthidium* was taken but once, and usually occurs later in the season on false-indigo; *Andrena rehni* was rather common. *Philanthus gibbosus* is the most common flower-wasp; *Tachytes* is quite numerous, but difficult to capture; its sharp buzz is very characteristic. *Ammophila inepta* is the most common Sphecid, *Sphex auripes* was not rare; the *Stizus nanus* was taken but once, and I had not seen it north of North Carolina. *Monedula carolina* was also taken but once and is the only specimen I have seen here. *Episyron snowi* was taken only a few times, and *Pseudagenia cupida* but once. *Ropronia* was taken but once on *Ceanothus.* The most choice Ichneumonid is the delicate *Ophionellus virginiensis;* every year I have taken a few, rarely more than one a day; it hovers close to the flower and is so slender one can scarcely see it. Ants were usually abundant, especially *Camponotus* and *Formica.* The saw-fly, *Cephaleia plagiata* is a fine and uncommon species here, several were taken.

Of the flies *Odontomyia flavicornis* and *O. occipitalis* are fine catches. *Volucella obesa* was taken twice, *Milesia* was often present, and also *Xylota elongata,* this latter would usually rest on some of the interior leaves of a bush, where it was hard to sweep with the net. The rare Conopid, *Dalmannia vitiosa,* described from California, was taken twice; *Occemyia* and *Zodion fulvifrons* were abundant, *Conops brachyrhynchus*

was always to be found. Of the Tachinids, *Gymnochaeta* was taken twice, *Celatoria spinosa* but once, *Spallanzia* was perhaps the most common.

Besides these identified forms there are a few other Hymenoptera, mostly Ichneumonidae, which are unnamed, and, taken but one, may be accidental visitors.

HEMIPTERA.

THYREOCORIDAE.

Thyreocorus gillettei V. D.
" pulicaria G.

PENTATOMIDAE.

Nezara pennsylvanica D. G.
" hilaris S.
Euchistus variolarius P. B.
Mormidea lugens F.
Mineus strigipes H. S.
Stiretrus anchorago F.

COREIDAE.

Euthoctha galeator F.
Corynocoris typhaeus F.
Chariesterus antennator F.
Alydus quinquespinosus S.
" eurinus S.
" pilosulus H. S.
Corizus nigristernum S.

PYRRHOCORIDAE.

Largus succinctus L.

LYGAEIDAE.

Lygaeus turcicus F.
" kalmii St.
Oncopeltus fasciatus H. S.
Ordancala dorsalis S.

PHYMATIDAE.

Phymata pennsylvanica H.

REDUVIIDAE.

Sinea spinipes H. S.
Apiomerus spissipes S.

ANTHOCORIDAE.

Triphleps insidiosus S.

CAPSIDAE.

Neurocolpus nubilus S.
Calocoris rapidus S.
Plagiognathus politus Uhl.
Lopidea media S.
Resthenia insignis S.
Lygus fusconotatus Prov.
Rhinocapsus vanduzeei Uhl.

HOMOPTERA.

MEMBRACIDAE.

Stictocephala lutea F.

CERCOPIDAE.

Aphrophora parallela S.

TETTIGONIDAE.

Oncometopia undata F.

JASSIDAE.

Phlepsius irroratus S.
Deltocephalus sp.
Thamnotettix clitellaria S.
Xestocephalus sp.
Agallia quadrinotata Fh.
Bythoscopus sp.

FULGORIDAE.

Oliarces humilis St.
Liburnia ornata St.

COLEOPTERA.

CARABIDAE.

Lebia ornata S.
" scapularis D.
" viridis S.

DERMESTIDAE.

Cryptorhopalum triste L.
" haemorhoidalis L.

ELATERIDAE.
Dolopius lateralis Esch.
Corymbites inflatus S.

LAMPYRIDAE.
Pyropyga decipiens Harr.
Chauliognathus marginatus F.

CLERIDAE.
Clerus lunatus Spin.
Trichodes interruptus L.

CERAMBYCIDAE.
Purpuricenus humeralis F.
Euderces picipes F.
Acmaeops directa N.
Strangalia famelica N.
" acuminata O.
" luteicornis F.
" bicolor S.
Leptura cordifera O.
" rubrica S.
" vagans O.
Typocerus lugubris S.
" lunatus F.
" sinuatus N.
" velutinus F.
Eupogonius subarmatus L.
Oberea bimaculata O.
" tripunctata S.
" schaumi L.

CHRYSOMELIDAE.
Babia quadriguttata O.
Cryptocephalus venustus F.
" notatus F.
Pachybrachys trinotatus M.
" infaustus H.
" tridens M.
" spumarius Suff.
Bassareus mammifer N.
Triachus atomus Suff.
Nodonota puncticollis S.
Orthaltica copalina F.
Griburius scutellaris L.

BRUCHIDAE.
Bruchus macrocerus Horn.

CISTELIDAE.
Isomira sericea S.

MELANDRYIDAE.
Mycterus scaber Hald.

OEDEMERIDAE.
Copidita thoracica F.

MORDELLIDAE.
Mordella octopunctata F.
" scutellaris F.
" marginata M.

ANTHICIDAE.
Macratria murina F.
Lappus sturmii Laf.

MELOIDAE.
Epicauta cinerea Forst.

MALACHIDAE.
Attalus pallifrons Mots.

CURCULIONIDAE.
Centrinus picumnus Hbst.

ANTHRIBIDAE.
Brachytarsus tomentosus S.

SCARABAEIDAE.
Valgus canaliculatus F.
Anomala minuta B.
Trichius piger F.

RHIPIPHORIDAE.
Rhipiphorus limbatus F.

HYMENOPTERA.

APIDAE.
Apis mellifera L.
Bombus vagans Sm.
" americanorum F.
Anthidium notatum L.
Heriades carinatus Cr.
Nomada perplexa Cr.
" ceanothi Ckll.

Nomada pygmaea Cr.
" sp.
Viereckella ceanothi Ckll.
Anthophora abrupta S.
Macropis ciliata Pt.
Calliopsis andreniformis Sm.
" flavifrons Sm.
Panurginus illinoisensis Cr.
" pauper Cr.
" virginicus Ckll.
Andrena cressoni Rbt.
" fragilis Sm.
" nasoni Rbt.
" obscura Rbt.
" rehni Vier.
" robertsoni D. T.
" spireana Rbt.
Colletes inaequalis S.
" latitarsis Rbt.
" nudus Rbt.
Halictus arcuatus Rbt.
" caeruleus Rbt.
" cressoni Rbt.
" forbesi Rbt.
" fuscipennis Sm.
" lerouxii Lep.
" ligatus S.
" pectoralis Sm.
" provancheri D. T.
" sparsus Rbt.
" vierecki Crw.
" spp. (Two)
Augochlora banksiella Ckll.
" fervida Sm.
" humeralis Pt.
" similis Rbt.
" viridula Sm.
Agapostemon splendens Lep.
" virescens F.
Prosopis modesta S.
" pygmaea Cr.
" zizae Rbt.
Sphecodes ranunculi Rbt.
" stygius Rbt.

VESPIDAE.

Vespa carolina D.
" germanica F.
" maculata L.
Polistes metricus S.
" variatus Cr.

EUMENIDAE.

Monobia quadridens L.
Eumenes fraterna S.
" verticalis S.
Nortonia symmorpha S.
Ancistrocerus ceanothi Roh.
" campestris S.
" quadrisectus S.
" saeculus S.
" tigris S.
" unifasciatus S.
" sp.
Odynerus conformis S.
" foraminatus S.

PHILANTHIDAE.

Cerceris alaope Bks.
" clymene Bks.
" clypeata D.
" compacta C.
" deserta S.
" imitatoria Schlett.
" robertsoni Fx.
Philanthus gibbosus F.

CRABRONIDAE.

Oxybelus laetus S.
" packardi Rbt.
" quadrinotatus S.
Notoglossa emarginata S.
" frontalis Rbt.
" sp.
Anacrabro ocellatus S.
Crabro bigeminus P.
" brunneipes P.
" chrysarginus Lep.
" interruptus Lep.
" tumidus P.
" sp.

Trypoxylon clavatum S.

NYSSONIDAE.

Gorytes flavicornis S.
Nysson subtilis Fox.

MIMESIDAE.

Mimesa pauper P.

LARRIDAE.

Tachytes harpax Pt.
Tachysphex acuta Pt.
" terminata Sm.

BEMBECIDAE.

Bembidula ventralis S.
Monedula carolina F.
" pictifrons Sm.
Stizus nanus Hdl.

SPHECIDAE.

Sphex auripes H.
Isodontia philadelphicum Lep.
Chalybion caeruleum L.
Sceliphron caementarium D.
Ammophila fragilis Sm.
" nigricans D.
" procera D.
" inepta Cr.

MUTILLIDAE.

Mutilla scaeva B.
Epherta scrupea S.

SCOLIIDAE.

Plesia namea F.
Elis plumipes D.
Tiphia spp.

PSAMMOCHARIDAE.

Allocyphonyx maura Cr.
Psammochares tropicus F.
" philadelphicus L.
" virginiensis Cr.
Pompiloides cylindricus Cr.
" marginatus D.
Batazonus interruptus S.
Episyron biguttatus F.
" snowi Vier.
Pseudagenia accepta Cr.
" cupida Cr.
Aporinellus fasciatus Sm.

CHRYSIDAE.

Holopyga dimidiata S.
Chrysis spp.

CHALCIDAE.

Perilampus cyaneus F.
Smicra torvina S.

BRACONIDAE.

Cremnops haematodes Br.
" semirubra Cr.
Boethus sp.
Microdus sp.
Chelonus biannularis Cr.
Toxoneura tibiator S.

ICHNEUMONIDAE.

Trogomorpha trogiformis Cr.
Anomalon metallicum Nort.
Campoplex villosus Nort.
Joppidum apicale Cr.
Ophionellus virginiensis Cr.
Ophion bilineatum S.
Capitonius ashmeadi D. T.
Eugnomus pallidus Ashm.
Polyblastus sp.
Cryptus sp.
Cnemonus sp.
Temillus sp.
Hyptia reticulata S.
Gasteruption tarsatorius S.
Ropronia garmani Ashm.

FORMICIDAE.

Cremastogaster lineolata S.
Camponotus melleus S.
Formica schauffussi M.
" subsericea S.
Tapinomma sessile S.
Lasius alienus F.
Monomorium minutum S.

TENTHREDINIDAE.

Acordulecera sp.
Eudelomyia aethiops F.
Cephaleia plagiata Kl.
Taxonus apicalis S.
" terminalis S.

DIPTERA

CULICIDAE.

Aedes canadensis Th.

TIPULIDAE.

Geranomyia rostrata S.

STRATIOMYIDAE.

Clitellaria subulata Loew.
Odontomyia flavicornis O.
" occipitalis John.
" virgo Wied.

TABANIDAE.

Chrysops niger Macq.
" fallax O. S.
" univittatus Macq.
Tabanus melanocerus Wied.

BOMBYLIDAE.

Exoprosopa emarginata Macq.
Anthrax lateralis S.
Bombylius fraudulentus John.
" mexicanus Wied.
" fulvibasis Macq.
Geron senilis Fab.

ASILIDAE.

Leptogaster pictipes L.
Ceraturgus cruciatus S.
Taractius octopunctatus S.
Dasyllis thoracica F.
" posticata S.
Asilus sericeus S.
" lecythus W.

DOLICHOPODIDAE.

Psilopodinus sipho S.

SYRPHIDAE.

Chrysogaster nitida Wied.
Chrysogaster nigripes Loew.
Pipiza pulchella Will.
Paragus bicolor F.
" angustifrons Loew.
Chilosia tristis Loew.
Baccha fuscipennis S.
" babista W.
Melanostoma mellinum L.
Syrphus americanus Wied.
" ribesii L.
Allograpta obliqua S.
Xanthogramma emarginata S.
" flavipes Loew.
Mesogramma geminata S.
" marginata S.
Sphaerophoria cylindrica S.
Sphegina rufiventris Loew.
Volucella obesa F.
Eristalis transversus Wied.
" dimidiatus Wied.
" brousi Will.
Syritta pipiens L.
Xylota bicolor Loew.
" ejuncida S.
" elongata Will.
Milesia virginiensis D.

CONOPIDAE.

Conops brachyrhynchus M.
Physocephala tibialis S.
Zodion abitus Ad.
" fulvifrons S.
" nanellum Loew.
Stylogaster neglecta Will.
Dalmannia vitiosa Coq.
Occemyia abbreviata Loew.
" loraria Loew.
Myopa vesiculosa S.

PIPUNCULIDAE.

Pipunculus æques Cr.
" nigripes Loew.

TACHINIDAE.

Gymnosoma fuliginosa D.
Trichopoda pennipes F.

Cryptomeigenia thentis W.
Celatoria spinosa Coq.
Hypostena floridensis T.
" sp.
Macquartia pristis W.
Leskia thecata Coq.
Leskiomera tenera Wied.
Epigrimyia floridensis T.
" robertsoni T.
Distichona varia V. W.
Plagia americana V. W.
Senotaenia trilineata V. W.
Aphria ocypterata T.
Ocyptera argentea T.
" carolina D.
" dosiades W.
Linnæmyia compta Fall.
Gymnochæta alcedo Loew.
Exoristoides slossonæ Coq.
Exorista confinis Fall.
Masicera festinans M.
Paraphyto gillettei T.
Belpharipeza leucophrys Wied.
Winthemia quadripustulata F.
Hilarella polita T.
Spallanzia hesperidarun Will.
Trichophora ruficauda V. W.
Peleteria robusta Wied.
Archytas aterrina Desv.
Echinomyia algens Wied.

DEXIIDAE.

Dexia sp.

Thelairodes sp.
Theresia tandrec Desv.

SARCOPHAGIDAE.

Sarcophaga spp.
Helicobia helicis T.

MUSCIDAE.

Pseudopyrellia cornicina F.
Pollenia rudis F.
Chrysomyia macellaria F.
Lucilia cæsar L.

ANTHOMYIDAE.

Homalomyia canicularis L.
Pegomyia fusiceps Zett.

SCIOMYZIDAE.

Tetanocera costalis Loew.

SAPROMYZIDAE.

Sapromyza glauca Coq.

ORTALIDAE.

Myrmecomyia myrmecoides Loew.
Amphicnephes pertusus Loew.
Rivellia micans Loew.
" pallida Loew.
" quadrifasciata M.

TRYPETIDAE.

Neaspilota achilleæ John.
Euaresta bella Loew.

SEPSIDAE.

Nemopoda cylindrica F.

AGROMYZIDAE.

Milichia indecora Loew.

TOTALS.

	Species.
Hemiptera	42
Coleoptera	58
Hymenoptera	165
Diptera	117
Total	382

Two Apparently Hitherto Undescribed Species of Xiphidium from the Salt Marshes of the Atlantic Coast of the United States (Orthop.).

By Henry Fox, Ph.D., Ursinus College, Collegeville, Pa.

(Plates VIII and IX.)

In the salt marshes of southern New Jersey (Cape May County) I have taken examples of two species of *Xiphidium,* which, so far as I have been able to ascertain from the literature and an examination of the collections in the Philadelphia Academy of Natural Sciences, appear not to have been hitherto recognized as valid species. Specimens of the present species from New Jersey were included in the Academy collection with *X. brevipenne,* while among some Florida specimens referred with a query to *X. nigropleurum* Bruner, were examples of what appear to be larger geographical races of both the new species. The following measurements and descriptions are based on New Jersey, and in the case of *X. spartinae* on Massachusetts material also. The Massachusetts specimens were taken in a small salt marsh at Wood's Hole.

Xiphidium spartinae n. sp. (Plate VIII).

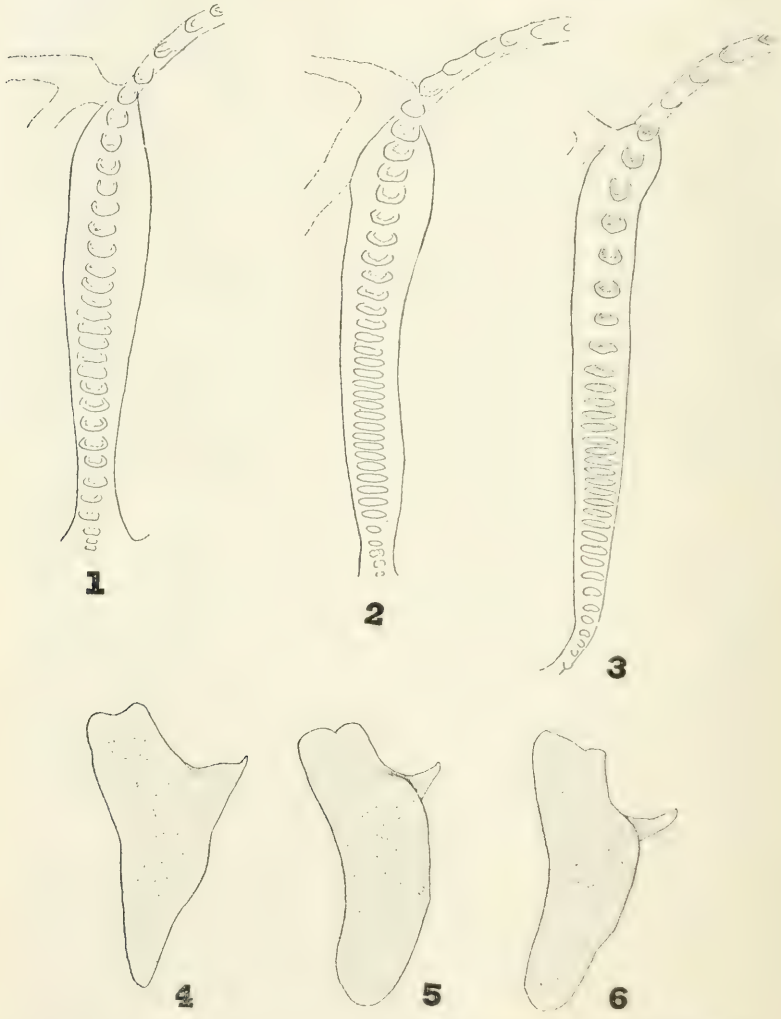
Measurements: Male—Length from fastigium to the tip of the supra-anal plate, 10.8-13.5 mm.; to the end of the pronotum, 4-5 mm.; to the tips of the tegmina, 10-14, mostly 11-12 mm.; length of pronotum, 2.3-3.0 mm.; of tegmina, 6.0-10.8, mostly about 7.0 mm.; of posterior femora, 8.2-10.5 mm.; of cerci, 1.5-1.8 mm.

Female—Length from fastigium to tip of supra-anal plate, 11-15 mm.; to the end of the pronotum, 4.3-5.5 mm.; to the tips of the tegmina, 9.5-12.0 mm.; to the tip of the ovipositor, 18-22 mm.; length of pronotum, 2.5-3.0 mm.; of tegmina, 5.5-8.0, mostly 7.0 mm.; of posterior femora, 9.2-11.2 mm.; of ovipositor (measured from the base of the subgenital plate) 8.2-11.0 mm.

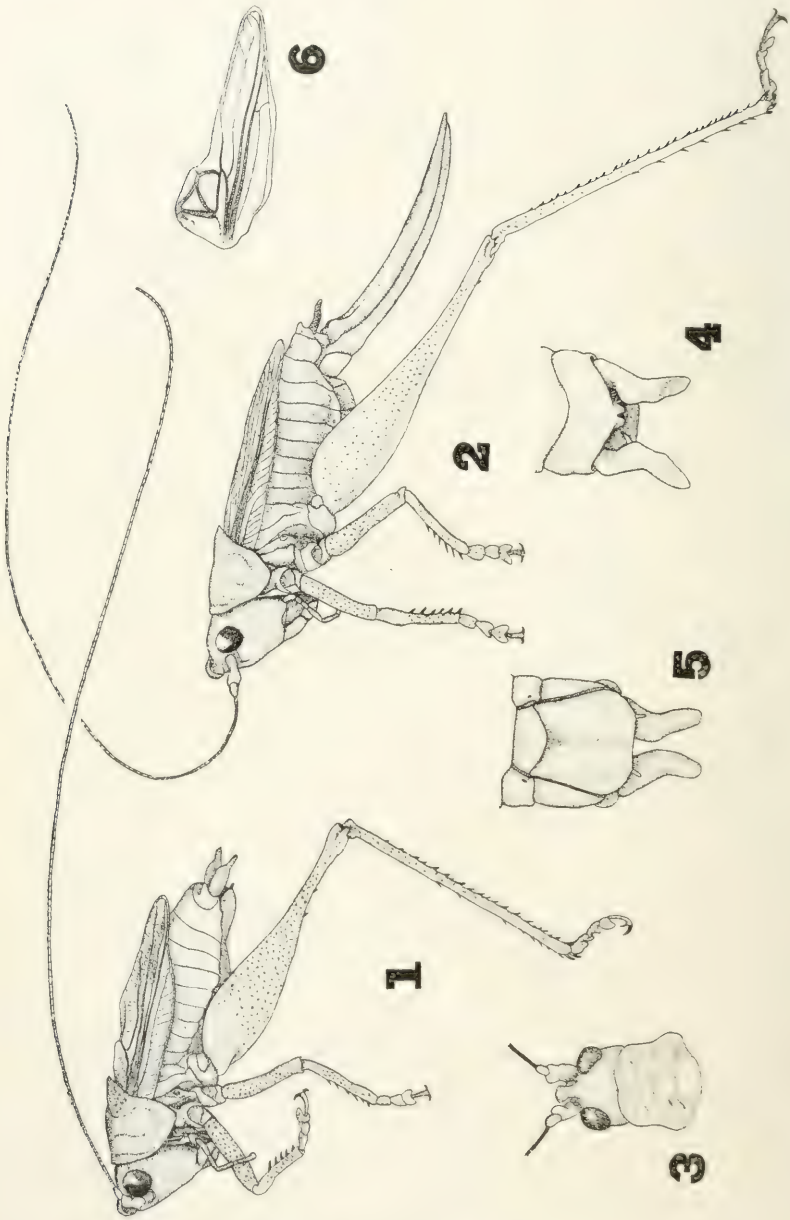
Structural Characters: Closely resembling *X. brevipenne* Scudder in general size and proportions, but rather more slender and graceful than that species. Fastigium of the vertex distinctly, though slightly, elevated above the plane of the occiput; when viewed from above barely constricted in the preocular region, slightly swollen in front, its sides viewed from above subparallel, about one-third as wide in its broadest part as the interspace between the eyes, its front margin convexly truncate, extending in front of the eyes a distance equaling about

two-thirds the antero-posterior diameter of the eyes; viewed from in front the facial portion of the vertex is elongate-triangular, about one and a third times deeper than wide, its apex separated from the apex of the facial fastigium by a narrow suture.

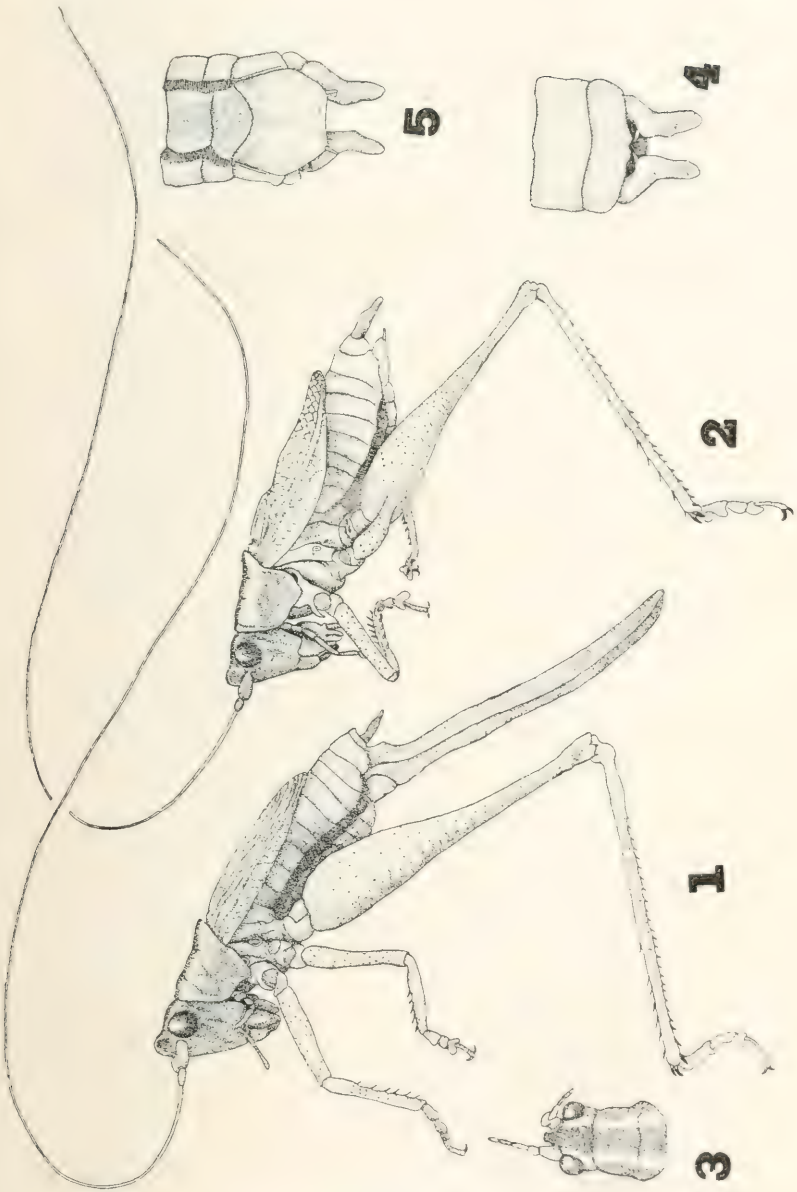
Disk of the pronotum with its anterior margin shallowly excavate,



Figs. 1-3.—Left stridulating veins of X. *brevipenne* (1), *spartinae* (2) and *nigropleuroides* (3).
Figs. 4-6.—Left cerci of *X. brevipenne* (4), *spartinae* (5) and *nigropleuroides* (6).



XIPHIDIUM SPARTINAE—FOX.



XIPHIDIUM NIGROPLEUROIDES—FOX.

its hind margin rotundo-truncate; lateral lobes nearly as deep as long, their antero-ventral borders barely, if at all, sinuate, their posterior margins shallowly sinuate, the antero-ventral angle inconspicuous, the ventral angle rounded, almost forming a right angle.

Tegmina in the male almost or quite reaching the tip of the abdomen, rarely exceeding it and only exceptionally surpassing the tips of the cerci (one individual, Ocean View, N. J.); in the female covering from slightly more than half to nine-tenths, usually three-fourths, of the abdomen; those of the male usually from two and a half to two and two-thirds the length of the pronotum, very rarely as much as three and six-sevenths times the length of the latter; those of the female shorter, mostly slightly more than twice the length of the pronotum, occasionally approaching in length those of the male; tegmina surpassing the wings by about one-fifth of their length, narrowly rounded at the tips, the veins and cross-veins distinct, but not unusually prominent. The tympanal area (Plate VIII, Fig. 6) is rather conspicuous and is distinctly broader and slightly longer than the same area in *X. brevipenne*; the stridulating ridge of the upper tegmina is stout, bearing numerous (about 40) teeth, which are evenly spaced on the outer half of the ridge but densly crowded together on its inner half. (Text-figures 1, 2.)

Anterior tibiae with usually six pairs of spines below, rarely with five. Posterior femora usually with one or two minute spines on their under sides, less frequently with none and still more rarely with as many as four; the genicular lobes terminate each in a minute spine with an additional inconspicuous subterminal spine below. Anterior tibial spines confined to the distal half of the tibiae.

The supra-anal plate of the male with its hind margin mesially produced and narrowly incised, cerci (Plate VIII, 5 and 4, also text-figure 5) moderately slender, curved, apically compressed, their tips rounded, rather blunt; a prominent swelling is present on the inner margin of each not far from the base and overlying the insertion of the tooth. Tooth interno-ventral, relatively short, but stout and when *in situ* usually invisible from above. Subgenital plate exceeding the base of the cercal tooth, its sides first diverging and then converging toward the hind margin (Plate VIII, Fig. 5), which is concavo-truncate with arched sides. Styles short. Cerci exceeding the subgenital plate by three-fourths the length of the latter.

Supra-anal plate of the female short, equilaterally triangular, about half as long as the cerci. Cerci about 1.2 mm. long, slender, compressed and rounded at the tip, slightly sinuate on their lower sides near their tips, the dorsal side less distinctly sinuate. Ovipositor distinctly, though gently, curved, the tip acute, formed by the upper division, the tip of the ventral division terminating immediately behind the extreme

tip of the upper division, the latter slightly less than twice the depth of the upper division. Ovipositor at least five-sixths the length of the posterior femora, frequently longer and sometimes nearly equaling them, surpassing their tips by an interval varying between one-fourth and one-half its length, and surpassing the abdomen by one and one-third to one and three-fifths the length of the latter. Subgenital plate trigonal, not surpassing the ninth abdominal segment, rounded apically.

Coloration: In the vast majority of specimens the general color is a clear grass-green with a more or less conspicuous orange tip to the abdomen and green cerci. Less frequently light brown individuals are taken in which the orange tip of the abdomen is duller and the cerci a pale olive. The following descriptions are based on the typical green race.

Male.—General color in life a bright, shiny grass-green with the terminal half of the abdomen usually of a conspicuous light orange hue; tegmina clear, slightly brownish with more or less of a trace of greenish at the apex, considerably clearer than in *X. brevipenne* and with scarcely a sign of the chestnut usually so marked in that species; cerci a bright green, except in brown individuals in which they are pale olive; dorsal stripe of the occiput and pronotum vandyke-brown, darkest on the occiput, margined laterally with an indistinct streak of yellowish, which on the pronotum shades into the green of the lateral lobes; dorsal stripe of the abdomen much paler, narrowed posteriorly and merging into the orange of the tip of the abdomen. All femora green with numerous reddish-brown dots. Hind tibiae dusky-green. Tarsi, brown.

Female.—Much like the male, but with the orange more restricted, confined to the extreme tip of the abdomen and the base of the ovipositor; cerci, green. On the abdomen the dorsal stripe is bordered laterally by a streak of greenish-yellow, which is cut off from the green of the sides by an interrupted band or series of blotches of pale brown.

Distribution: In southern New Jersey and at Wood's Hole I have taken this species exclusively in salt marsh, where it is abundant on the short Spartinas covering the tidal flats. Its preference for these maritime grasses led me to select the specific name, *spartinae*, here applied to it. Less frequently it may be found on the "black grass," *Juncus gerardi*, which forms one of the characteristic plants of the lowlands bordering the marshes on the upland side. Only rarely does it appear to stray inland and then only to that part immediately adjoining the salt marsh.

Comparison with other species: The present species appears to have most points in common with the following three species: *X. brevipenne, X. nemorale* and *X. nigropleurum.*

From *X. brevipenne* the new type may be distinguished by (1) the curved ovipositor; (2) the wider tympanum of the male tegmina; (3) the entirely different form of the cerci of the male (cf. text-figures 4 and 5); (4) the more prominent internal tuberosity of the male cercus; (5) the invisibility of most of the cercal tooth when viewed from above while in its usual position; (6) the form of the cercal tooth which is relatively slender and tapering, not swollen and obtuse as in *brevipenne;* (7) the usual, though not invariable, presence of sub-femoral spines on the hind femora; (8) the prevalence of orange rather than chestnut on the tip of the abdomen; (9) the green, instead of brown, cerci and (10) the almost total absence of chestnut from the tegmina.

From *X. nemorale* Scudder, this species differs in (1) its smaller size and slenderer form; (2) the narrower and more elevated fastigium of the vertex; (3) the relatively longer tegmina, especially in the male; (4) the less prominent veins and veinlets of the tegmina; (5) the greater difference in proportions of the tegmina and wings, the latter in *spartinae* being considerably shorter than the tegmina, while in *nemorale* they are only slightly shorter; (6) the usual presence of sub-femoral spines; (7) the less pronounced curve of the ovipositor; (8) the form of the sub-genital plate of the female, which is more truncate in *nemorale* than in *spartinae;* (9) the slenderer tips of the tegmina; (10) the generally green instead of brown color; (11) the green, instead of brown, cerci of the male.

(Note: These comparisons are based upon examples of *X. nemorale* in the collection of the Academy of Natural Sciences).

From *X. nigropleurum* Bruner, *spartinae* differs in its (1) smaller size and slenderer form; (2) its shorter hind femora and (3) tegmina; (4) the curved ovipositor which is always distinctly shorter than the body; (5) the apparent absence of

long-winged females; (6) the entire absence of black from the sides of the abdomen.

With the exception of characters 1), (2) and (6) the males of *spartinae* and *nigropleurum* are closely similar. A close examination of the cerci of Nebraska specimens of the latter in the Academy's collection shows that they are distinctly stouter and more swollen than those of *spartinae*. The depressed apical portion also appears to be shorter than the same part in *spartinae*. A female specimen from Florida grouped with *nigropleurum* in the collection is doubtless an example of a larger race of *spartinae*, while certain others, also from Florida, closely resemble another salt marsh species, *Xiphidium nigropleuroides* (n. sp.) which I have obtained in southern New Jersey and which, although closely resembling *nigropleurum* in many structural characters, differs entirely from it in size and in color characters. Both of these types were referred with a query by Rehn and Hebard to *X. nigropleurum*. (Proc. Acad. Nat. Sci., June, 1907, pp. 313-314).

Xiphidium nigropleuroides n. sp. (Plate IX).

In addition to *X. spartinae* I have collected in the salt marshes of Cape May County, N. J., another species of the same genus, which, although it has a general resemblance to *X. nigropleurum* Bruner, appears to constantly differ from the latter in size and general proportions and in its strikingly different coloration. In its native habitat, as far as I have observed, it is associated with *X. spartinae*, but is much scarcer than the latter and is almost entirely restricted to the tall Spartina grasses which fringe the banks of the numerous channels and ditches traversing the marshes.

I have not found any description of a *Xiphidium* in the literature which corresponds entirely with the form here described. Three or four examples are in the collection of the Academy of Natural Sciences of Philadelphia. They are from Florida (Cedar Keys), and have been referred by Rehn and Hebard with some hesitation to *X. nigropleurum* Bruner. (Proc. Acad. Nat. Sci., Phila., June, 1907, pp. 313-314).

Measurments: Male.—length from apex of vertex to tip of supra-anal plate, 11-13.2 mm.; to end of pronotum, 4-4.5 mm.; to the tip of the tegmina, 11-11.8 mm.; length of the pronotum, 2.3-2.6 mm.; of tegmina, 7 mm.; of hind femora, 10 mm.; of cerci, 1.6 mm.

Female.—Length, 11.2-13.5 mm.; to end of pronotum, 4.2-5.0 mm.; to tip of tegmina, 9.5-11.4 mm.; to tip of ovipositor, 21.3-24.5 mm.; length of pronotum, 2.6-3.0 mm.; of tegmina, 5.5-6.8 mm.; of posterior femora, 11-12 mm.; of the ovipositor, 12-14 mm.

Structural Characters: Apparently resembling *A. nigropleurum* in general form, but smaller and slenderer. Fastigium of the vertex distinctly elevated above the plane of the occiput; viewed from above, its sides are subparallel with the slightest indication of a constriction in the preocular region; in its widest part it is between a fourth and a third as wide as the interspace between the eyes; its front margin is truncate and extends anterior to the eyes a distance equaling three-fourths the antero-posterior diameter of the eyes; viewed in front, the facial protion of the vertex is elongate-trigonal.

The pronotum is relatively short; its disk with its anterior margin shallowly emarginate, its hind margin rotundo-truncate; lateral lobes nearly as deep as long, their antero-inferior margins distinctly, though slightly sinuate, their posterior margins with a shallow humeral sinus; the ventral angle slightly projecting.

Tegmina of male usually reaching the front margin of the penultimate abdominal segment; that of the female shorter, covering about five-sevenths of the abdomen and usually reaching the hind edge of the sixth segment, but occasionally extending to the penultimate segment. Tegmina of the male from two and three-fifths to three times the length of the pronotum, those of the females from a little more than twice to two and a third times its length. Tegmina in both sexes surpassing the wings by about a fifth of their length.

Anterior tibiae with six pairs of spines below.

Posterior femora long and slender, in all cases so far examined without subfemoral spines. Genicular lobes terminating each in a minute blackish spine with an additional subterminal spine below.

Supra-anal plate of male with its hind margin mesially produced, reflexed downwards and narrowly incised. Cerci roughly sigmoid, closely similar to those of *X. spartinae,* but slightly slenderer and with a rather narrower apex (see text-figures 5 and 6). Tooth stout, in the same position as in *X. spartinae,* but distinctly longer than in the latter. As in *spartinae* the cerci show a prominent bulbous swelling immediately dorsal of the base of the tooth. When viewed from above the cercal teeth are just barely visible behind the supra-anal plate; below they are hidden from view by the subgenital plate.

Cerci exceeding subgenital plate by about three-fourths the length of the latter. Styles short.

Supra-anal plate of female short, equilaterally trigonal, about half as long as the cerci. Cerci about 1.2 mm. long, slender, acuminate at the tip and barely sinuate below. Ovipositor long and approximately straight with a very slight open-sigmoid curve, its tip barely upturned, acute, formed by the upper division, the ventral division terminating immediately behind the tip; the upper division about twice as deep as the lower division. Ovipositor exceeding the posterior femora by about two-fifths of its length; surpassing the abdomen by about one and one-third the length of the latter. Subgenital plate trigonal, not surpassing the ninth abdominal tergum; rounded apically.

Coloration: Male.—In most cases the general color is a dark brown, but occasional individuals are of a light olivaceous tint.

Median stripe on head blackish-brown, broadest on occiput, narrowed in front to the width of the apical tubercle, bordered laterally by grayish-white. Face, dark brown, darkest on the facial fastigium, radiating below to form a brownish suffusion over the genae, which are a light grayish-green with numerous brownish spots and blotches. Postocular stripe brown, deeper than long and extended well down over the genae where it fades into the general grayish tint of the latter.

Median stripe of the pronotum blackish, bordered laterally by a broad streak of grayish which extends down over the dorsal third of the lateral lobes. Remainder of the lateral lobes a deep rich brown.

Tegmina with the basal three-fourths a pale chestnut or orange, the color being deepest on the larger veins; apical portion of a pale translucent bluish-green; radial areas colorless.

Median dorsal abdominal stripe brown, blending laterally with the lighter brown of the sides and posteriorly more or less interrupted by invasions of the orange of the sides. Anteriorly the sides of the abdomen are a light brown bordered below by grayish; posteriorly the brown is replaced by a bright orange which covers about half of the abdomen and the subgenital plate. Spiracular areas of the first to the eighth segments inclusive a deep brownish-black, the whole forming a conspicuous band along the ventral portion of the sides of the abdomen. This blackish band is in striking contrast with the grayish or orange of the sides.

Sternites of the abdomen a beautiful steel-blue more or less mixed and blended with pale orange posteriorly. Subgenital plate orange.

Cerci a bright grass-green, similar in color to those of *spartinae*.

Posterior femora a pale greenish-blue strongly suffused with brownish-orange at the base and thickly spotted with reddish. Tibiae pale bluish green. Tarsi dusky.

Female.—Nearly similar to the male, but with the orange of the abdomen duller and confined to the terminal third. Ovipositor a pale bluish-green strongly suffused with orange-chestnut apically.

Distribution: Personally, I have taken this species only in the salt marshes of Cape May County, N. J. Several specimens in the Academy's collection from Florida grouped under *X. nigropleurum* Bruner, are undoubtedly this species, although they are larger than the New Jersey types. It would seem therefore that the distribution of this species includes at least the salt marshes of the Atlantic coast from Florida to New Jersey.

Comparisons with other species: Structurally the females of *nigropleuroides* closely resemble those of *nigropleurum,* although the hind femora are relatively longer in the latter. The male bears closest resemblance to that of *spartinae.* In fact it was only after a long and arduous analysis and comparison of the various characteristics of the two forms that I was enabled to determine some apparently constant structural differences. The cerci of the two forms are superficially alike, but camera lucida drawings (Text-figs. 5 and 6) enabled me to determine their specific differences.

The color characters of *nigropleuroides* are to my knowledge peculiar and by them it is an easy matter to recognize the species in the field. The light brown form has the colors less conspicuous, but even in its case enough of the characteristic color markings remain to enable one to identify it with little hesitation.

EXPLANATION OF PLATES.

PLATE VIII: *Xiphidium spartinae* n. sp.:
1. Lateral view of a ♂ specimen.
2. Lateral view of female.
3. Dorsal view of head and pronotum of a female.
4. Dorsal view, tip of male abdomen.
5. Ventral view, tip of male abdomen.
6. Left tegmina of male.

PLATE IX: *Xiphidium nigropleuroides* n. sp.:
1. Lateral view of female.
2. Lateral view of male.
3. Dorsal view, head and pronotum, male.
4. Dorsal view, tip of male abdomen.
5. Ventral view, tip of male abdomen.

Records of Heteroptera from Brownsville, Texas (Hemip.).

By J. R. de la Torre Bueno, White Plains, N. Y.

In 1906, Mr. H. G. Barber published a list of "Hemiptera from southwestern Texas"* based on material collected in 1903 and 1904 by Mr. C. Schaeffer, in which were recorded a number of species new to the United States. Through Mr. George Franck I came into possession this summer of a small lot of Heteroptera collected by Mr. George Dorner in Brownsville, Texas, the scene of the labors of Mr. Schaeffer and also of the late Prof. F. H. Snow, of the University of Kansas. In going over this lot, I was able to confirm the records of *Euschistus bifibulus* P. B., *Leptoglossus phyllopus* Linné, *Acanthocephala declivis* Say, *Largus convivus* Stål, *Jadera aeola* Dallas, *Corizus sidae* Fabr., *Rasahus hamatus* Fabr., *R. biguttatus* Say, *Pnirontis infirma* Stål, *P. languida* Stål, and *Repipta taurus* Fabr. In addition to these, however, there were the twelve species hereafter enumerated which have not been previously recorded from that locality, seven of which are new to the United States, so far as may be deduced from Banks' Catalogue and other sources, including Biologia Centralia Americana. They follow with appropriate comment in each case.

Euschistus crenator Fabr.

This has been previously recorded from Texas by Stål, although seemingly not taken in this exact locality.

Brochymena haedula Stål.

So far as known this species has not been recorded from as far north as the United States. The published records give it only for Guatemala and Mexico.

Acanthocephala femorata Fabr.

Does not seem to have been heretofore recorded from Texas, although pretty widespread throughout the southeast United States.

* Bulletin, Museum Brooklyn Institute of Arts and Sciences. Vol. I, No. 9, pp. 255-289.

Leptocorisa tipuloides DeG.

Apparently not uncommon in the Southern States, but not taken at Brownsville.

Ozophora (=Davila Dist.) **consanguinea** Dist.

Recorded from Mexico and Guatemala, but previously unknown from the United States.

Largus bipustulatus Stål.

A Mexican form apparently not previously taken north of the boundary.

Dysdercus obscuratus Dist.

A species described from Costa Rica and Guatemala. Taken by me in Mexico and now recorded from the United States for the first time.

Pygolampis spurca Stål.

Known from Panama and Guiana, according to Champion, and not previously known to occur as far north.

Narvesus carolinensis Stål.

A common North American Reduviid, which does not seem to have been previously taken at Brownsville.

Meccus phyllosoma Burm.

This species has been recorded from Mexico, Colorado and California, but seemingly not from Texas.

Nabis signatus Uhler.

Occurs in Panama and the West Indies; not heretofore recorded from the United States.

Corixa edulis Champion.

Originally described from Lake Texcoco, Mexico, and now recognized for the first time from the United States.

One fact is striking in connection with this small collection. It is the absence of the smaller *Lygaeidae, Coreidae, Pentatomidae* and *Reduviidae*. This is noticeable in practically all collections of Heteroptera, and it is indeed unfortunate, as the small forms make up the bulk of the great Lygaeid family,

and the entirety of the *Capsidae* and *Anthocoridae,* as well as the *Aradidae* and *Tingidae.* In fact, the families *Lygaeidae* and *Capsidae* constitute together at least one-half of the Heteropterous fauna of any given region. It may not therefore be out of place to here urge a special effort in securing these small forms, which even in closely collected sections such as the Northeastern States, for instance, still yield unrecognized species.

The Female of Sesia rubrofascia Hy. Edw. (Lepid.).

By Frank Morton Jones, Wilmington, Delaware.

In 1881 (Papilio 1, 191) Mr. Henry Edwards described *Sesia rubrofascia* from a single male collected in Georgia by Morrison. In 1901, when this family was monographed (Beutenmüller, Mem. Am. Mus. Nat. Hist. Vol. 1), the type specimen was still unique. In April, 1907, the writer captured a red-banded Sesia, male and female, at Summerville, South Carolina; the male is undoubtedly Edwards' *rubrofascia*; the female has opaque primaries, and if previously captured has perhaps been mistaken for a small *Sanninoides exitiosa* ♀, which it resembles, though readily separable on comparison, Mr. Beutenmüller has kindly examined my specimens and confirmed their identification.

Description of female: head, palpi, antennae, thorax, black with a purplish-blue metallic lustre; legs the same color, with tarsi and spines showing light beneath over-lying dark scales; abdomen black, with fourth and fifth segments entirely red; anal tuft black; primaries densely opaque, black with blue and purple reflections; secondaries transparent to base, with black discal mark, the fringe and black outer border twice as broad as in the male; expanse 25 mm.

The News extends its hearty congratulations to Professor John Henry Comstock, and to American Entomology, by reason of his election as an Honorary Fellow of the Entomological Society of London, on November 1, 1911, to fill the vacancy created by the death of Dr. Samuel H. Scudder. On the same occasion Father Eric Wasmann was also made an Honorary Fellow in the place of Mr. P. C. T. Snellen, lately deceased.

Gyronycha Csy. (Coleop., Staphylinidae), a critical study.

By A. Fenyes, M.D., Pasadena, California.

Amongst the nearctic Aleocharinae, *Gyronycha* Csy. can be characterized as follows:

Tarsi 4-4-4-jointed; antennae 11-jointed; right mandible dentate, left simple; maxillary palpi 4-jointed; labial palpi 3-jointed; ligula bifid; genae entirely margined. Tarsal claws abruptly bent behind the middle.

Mesosternal process acute; mesocoxal cavities entirely closed; middle coxae contiguous.

Male with prominences on the third and seventh tergites.

The tarsi are unquestionably 4-4-4-jointed, although the fourth joint of the third tarsal pair (at least) apparently is divided by an obsolete (anchylosed) suture. The clearest view of the tarsi can be obtained by observing them from below, where no vestiture will interfere. If we would accept the presence of this suture as a true demarcational line between two joints, then the seemingly 5th joint would be very short in *Gyronycha,* a circumstance entirely at variance with the generally observed fact that the last tarsal joint of the hind legs is always long in the Aleocharinae (if I am not mistaken), and longer than the penultimate joint. This preponderance in length of the last tarsal joint is undoubtedly necessary to give a better leverage to the tarsal claws, especially where the latter are so strongly modified as they are in *Gyronycha.*

The last joint of the maxillary palpi is remarkably short, especially when compared with the penultimate joint.

The ligula is undoubtedly divided, and not entire, in certain lights seemingly only emarginate at tip; the lobes rather broad and subtriangular.

The infralateral carina of the head can easily escape notice, and is in some specimens seemingly interrupted behind, but always visible when the lower surface of the head is freely displayed and viewed in proper light. This carina in

Gyronycha is more distant from the eye than in the majority of the other genera; it is almost entirely on the lower surface of the head, but should not be confounded with the gular sutures, which are near the lower median line.

The mesocoxal cavities are entirely surrounded by a bead (entirely closed).

The secondary male characters on the abdomen consist in a backwardly directed carina in the apical half of the third tergite, and in a small carinula at the base of the seventh tergite.

The type species is:

Gyronycha valens Csy., Ann. N. Y. Ac. Sc. VII. 1893, 373. With this I propose to unite *G. texana* Csy., ibid. 374, *obscura* Csy., ibid. 375, *fusciceps* Csy., ibid. 376, *lepida* Csy., Mem. Col. II. 1911, 217, and *longicornis* Csy., ibid. 217. This synonymy is based mainly on the entirely uniform male characters, which, it is safe to assume, the above mentioned forms possess. Those students who wish to record local, individual or other varieties, can use the above synonyms as trinomials; to me the various described (and some other undescribed) forms do not present themselves as specifically different.

The species lives along sandy creeks, and probably burrows in the soft sand. I have specimens from Arizona, taken by myself in the debris of a storm-drain at Flagstaff; others from Porvenir, New Mexico, were taken in evening flight along the creek, and under stones at the shore of another creek. One of my California specimens was taken after a flood in the debris of the Arroyo Seco near Pasadena; and finally there are in my cabinet single specimens from Indiana, Maryland and New Hampshire, none of them provided with data on their habitat.

It is not impossible that *Bamona robusta* Shp., Biol. Centr. Amer. Col. I. 2. 1883, 290, is really the type of the genus; in this case the above specific names will all lapse into synonymy.

The other species hitherto carried on our lists as *Gyrony-*

cha is *attenuata* Csy., Bull. Cal. Acad. Sc. I. 1885, 306, and has the following synonymy: *lineata* Csy., Ann. N. Y. Ac. Sc. VII. 1893, 376; *fenyesi* Brnhr., Deutsch. Ent. Ztschr. 1906, 337; *longipennis* Csy., Mem. Col. II. 1911, 219. This species must be removed from *Gyronycha* on account of the 5-5-5-jointed tarsi, and must be made, for the time being, the representative of a new genus: *Gyronychina* Csy. (Mem. Col. II. 1911, 218). It seems to belong in the neighborhood of *Apimela* M. & Rey, and also of *Aleuonota* Thoms., in case this latter genus proves to possess 5-5-5-jointed tarsi.

Mr. P. de Peyerimhoff informs me, in a letter dated the 24th of June, 1911, that in both *Apimela* and *Aleuonota* the front and middle tarsi are pentamerous. I found this to be the case in *Apimela,* but not in *Aleuonota,* although I may be mistaken. According to Peyerimhoff, both genera ought to be placed near *Phloeopora* Er.

I have in my collection a large series of *Gyronychina attenuata* Csy., all from California, the specimens showing a great range of variation. Some are very pale, reddish brown and shining, while the darker specimens are more opaque, especially on the elytra; the antennae are longer or shorter, according to the size of the specimens and also to the method of their preservation; the head, prothorax, elytra and abdomen also vary to a considerable extent, and any attempt to base a species on such minor differences would result in splitting my series into at least a dozen species.

The males are probably the more opaque specimens, while the females seem to be the pale and shining ones; the probable males are much more frequently taken than the females.

The life habits of *Gyronychina attenuata* Csy. are the same as those of *Gyronycha valens* Csy. I took most of my specimens in evening flight, and some of them in the storm debris of the Arroyo Seco.

Dr. Walter Horn, of Berlin, expects to be in Italy until mid-March for the benefit of his health, as he has been suffering from bronchial pneumonia.

Two New Butterflies (Lepid.).

By HENRY SKINNER, Philadelphia, Pa.

Mesosemia ramsdeni, n. sp.

Male. Expanse 30 mm. Primaries blackish brown with two white dots on the costa, two-thirds the distance from the base to the apex; extending from these to the inner margin is a whitish fascia, lined interiorly by black; at outer angle is a black spot about 2 mm. in diameter; at base of wing are four black lunule-shaped markings, two in the cell and two below. Secondaries blackish brown with a well defined black ocellus at anal angle, narrowly margined with orange, with a line of blue scales on its outer side; two broad black bands at base, then a narrow black line crossing the wing; on outer margin three nearly obsolete black dots.

Underside. Primaries much as above but the white fascia is more distinct and composed of the two costal spots and four others; ocellus black with a few blue scales; the spots at the base as above but better defined; color of wing lighter. Secondaries have a line of eight black spots crossing the wing, and at base about eleven small spots of black; ocellus at anal angle black with two superimposed blue spots. Antennae black annulated with white, tip cream color.

Female nearly like the male but lighter in color; on primaries an orange band extending from ocellus to costa; three brown spots in cell and two below. Secondaries with an orange line from ocellus to costa. Wings below as in male.

From two specimens, male and female, from La Yberia, twenty miles from Baracoa, Cuba, September 18th, 1909. Named for Mr. Chas. T. Ramsden, the well known entomologist of Guantanamo, Cuba. The species is not closely related to any known to me.

Megathymus neumoegeni stephensi, n. sub. sp.

Male. Color of wings grayer than in *neumoegeni.* Upperside with the markings as in the Huachuca mountains, Arizona, form of *neumoegeni* but cream color instead of orange yellow.

On the underside of the secondaries the spots are larger than in *neumoegeni* and more accentuated; there is a large coalesced spot near the center of the wing and eight spots parallel to the margin.

This is a very striking-looking race. About thirty specimens were taken by Mr. Frank Stephens, the well known collector of California and Arizona mammals, birds, plants

and insects. Type locality, La Puerta, eastern edge of San Diego County, California, October 11th, 1911. Five specimens were sent to me by Mr. L. E. Ricksecker, who says "they do not vary much. None of them have the spots in actual bands, but always in distinct spots and all of these are dirty white, not yellow. It so happens that Mr. Stephens has a single specimen of *neumoegeni* from the Huachuca Mountains, Arizona. It has the broad orange, fulvous band and agrees with the description. Hence we think the La Puerta specimens are a variety, and when you consider the circumstances it looks to me very probable that it will be found constant. My reason is because the La Puerta Agave district is entirely isolated from any other Agave field and is a very long distance from the Agaves of southern Arizona. There is little, if any, probability of individuals going back and forth between the two districts and thus if the La Puerta tribe or colony is left by itself it will gradually produce a new form, variety or species."

I have given Mr. Ricksecker's theory to account for this strikingly different colored race. He says it feeds on *Agave deserti.*

Type in the collection of the Academy of Natural Sciences of Philadelphia.

Description of a New Variety of Smerinthus jamaicensis (Lepid.).

By S. D. Nixon, Baltimore, Md.

Smerinthus jamaicensis, n. var. **flavitincta.**

Color of forewing same as type, only much lighter. Color of head light brown. Body light slate color.

Hindwing, cream color with tint of lemon near eyespots; eyespots same as in variety *geminatus* with two blue spots, the red missing entirely.

Type.—Male in my collection.

Habitat.—Baltimore, Maryland.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

TO CONTRIBUTORS.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, four weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form and without covers, will be given free, when they are wanted; if more than twenty-five copies are desired, this should be stated on the MS. The receipt of all papers will be acknowledged. Proof will be sent to authors for correction only when specially requested.—Ed.

PHILADELPHIA, PA., MARCH, 1912.

At its recent meeting in Washington, the Entomological Society of America voted down a proposition to the effect that a recommendation be made to the Second International Congress of Entomology that a list of *nomina conservanda* of insects be prepared without strict reference to the rule of priority.

Those who regretted this action will be consoled to some extent by an article (in English) in the *Zoologischer Anzeiger* for January 3, 1912, entitled, "A Vote against the strict application of the Priority-Rule," by Dr. Th. Mortensen, of the Zoological Museum in Copenhagen. This vote was taken among the professional Zoologists of Denmark, Finland, Norway and Sweden, not including anatomists, palaeontologists or amateur zoologists, with the result that two Scandinavian Zoologists, Dr. Sig Thor, of Skien, Norway, and Dr. E. Wahlgren, of Malmö, Sweden, "are of opinion that *the law of priority should be strictly applied in all cases.*" One hundred and twenty (120) "undersigned Scandinavian and Finnish Zoologists protest *against the strict application of the law of priority in all cases and express the desire that the most important and generally used names should be protected against any change on nomenclatorial grounds.*" [The italics are our own.]

Some of the entomologists among these 120 names are: Adlerz, Aurivillius, Bengtsson, Hansen, Holmgren, Lundbeck, Palmén, E. Reuter, O. M. Reuter, Sahlberg, Schöyen, Sjöstedt, Theel, Tragardh, Trybom and Tullgren.

Dr. Mortensen comments on the vote as follows:

"The result of the vote is very striking. Of the 122 names there are 2 (two) for the strict application of the priority rule in all cases, which means less than 2 per cent. It may perhaps not be unreasonable to conclude from this result that the number of those Zoologists, who swear to the strict application of the priority rule, is upon the whole very small, the great majority wishing to have the more important names preserved unaltered.

It is to be hoped that the Zoologists of other countries will follow the example given here. When this has been done and it has been definitely proved that the great majority object to the strict application of the priority rule, it may perhaps be expected that the tyranny of that notorious law, which has already done so much damage to science, will be thrown off....."

THE NEWS will be glad to receive and to print the names of any American entomologists and zoologists who will send in their votes on one or the other of the two alternatives which we have italicized above.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

ANNOUNCEMENT OF THE JOURNAL OF ECONOMIC ENTOMOLOGY.—At the Annual Meeting of the American Association of Economic Entomologists held at Washington, D. C., Dec. 29, 1911, it was voted that the Association take over and publish the Journal of Economic Entomology in accordance with an offer made by the Journal of Economic Entomology Publishing Company.

The Publication will be in charge of Dr. E. P. Felt, Albany, N. Y., as Editor; Dr. W. E. Britton, New Haven, Conn., as Associate Editor, and A. F. Burgess, Melrose Highlands, Mass., as Business Manager. The Journal will be conducted along the same lines as in the past, but such improvements as possible will be made from time to time.

As the Secretary of the Association is now Business Manager of the Journal, all communications, except material for publication and related matter, should be sent to the undersigned.—A. F. BURGESS, Melrose Highlands, Mass.

Monograph of the genus Hydrophilus (Coleop.)—M. A. d'Orchymont, Statiertzaat 58, Meenen, Belgium, is preparing a work on this subject and desires to examine as many specimens of this genus as possible. He would be glad to identify material for those who possess it. He has published a paper on certain species of the Hydrophilidae in tome XIX of the *Memoires de la Societe Entomologique de Belgique*, 1911.

The Lake Laboratory of the Ohio State University, at Cedar Point, near Sandusky, Ohio, will offer courses of instruction in Zoology, including Entomology, and Botany from June 17 to July 26, 1912, while free tables will be open to investigators from June 20 to September 9. Further information may be obtained from Professor Herbert Osborn, Director, Ohio State University, Columbus, Ohio, or after June 15 at the Lake Laboratory.

The Memorial portrait of the late Dr. James Fletcher, Dominion Entomologist, which is the work of Mr. Franklyn Brownell, R.C.A., was unveiled at an evening meeting of the Ottawa Field-Naturalists' Club on January 9th, 1912. It is an exceedingly good likeness and, as most satisfactory arrangements have been made with the Municipal Library Board and the Librarian of the Carnegie Library, the portrait will be hung in a prominent place in this latter building. It will be remembered that the Memorial Fountain, erected on the Central Experimental Farm, was unveiled on July 19th, 1910. The Fountain, including the medallion, is the work of Dr. R. Tait McKenzie, of the University of Pennsylvania, Philadelphia, U. S. A.

Calpodes ethlius (Lepid.)—On November 5th, 1911, my friend, Mr. Neuman of this city, discovered in his garden six caterpillars new to him on Canna. As there was prospect of cold weather he took food plant and larvae into the house so that they might not be injured by the frost. Two days later they began to spin their cocoons which, while not of a dense nature, were very strong, about twice the length of the pupae. The color of the cocoon is white and has much the appearance of ordinary writing paper. The cocoon-spinning was done in a way similar to that of *Eudamus tityrus*, beginning by pulling the edges of the leaves close together. On November 20th, 21st and 22d, the butterflies made their appearance and, much to the astonishment of Mr. Neuman, proved to be *Calpodes ethlius*, a southern species. To my knowledge this species has never been found feeding so far north. Mr. Neuman has been so kind as to present to me a leaf containing cocoon and chrysalis, also a fine specimen of the migrator's descendants.

Frost occurred the night from Nov. 6th to 7th, which would have proved fatal to the larvae. I conclude that, although the food plant is plentiful here, the species could never thrive.—Ernest Schwarz, St. Louis, Mo.

Attractiveness of Formic Acid(?)—Robert Venables, of Mulhouse, Alsace, gives account in *Nature* for Sept. 21, 1911, of his poodle eating wasps, "generally catches them alive, evidently suffers somewhat from the sting, but only for ten or fifteen seconds." "Mr. Venable's reference to formic acid (*Nature*, Sept. 21, p. 382) reminds me that once, in the pine woods at Potsdam, I came upon a forester performing some curious evolutions, apparently patting something on the ground and then holding his hands to his face. He explained that it was an ant-hill, and the smell was 'very good for the nerves.'" (E. Everett, *Nature*, Oct. 19, 1911).

A Locustid injurious to Man.—Dr. Hugh S. Stannus writes in the *Bulletin of Entomological Research*, 1911, page 180, "among the natives of Nyasaland [a Locustid, *Enyaliopsis durandi*, or an allied species] is held to cause skin lesions by the emission of a fluid on the bare skin surface of the body . . . having asked for a volunteer, I procured a specimen of the Locustid in question and tested the truth of the native statement. The insect was put on to the arm of the native, and then worried with a penholder. It promptly emitted a slightly yellowish clear fluid from pores at the side of the body near the junction of the thorax and abdomen. This secretion was allowed to remain on the arm. In a few hours a sensation of burning was produced, the skin showed signs of reaction, swelling and redness, and twelve hours later the superficial layers appeared to be dissolved, so that the pink skin beneath was visible, covered by a serous exudation. This superficial destruction of tissue healed in a few days without trouble. The secretion was acid to litmus. I have little doubt that such a breach of surface may in many cases be the starting point for extensive ulceration, if it becomes infected, as in a similar way small abrasions in the native are often followed by ulceration, owing to lack of proper treatment."

Effects of Climatic Conditions on Development of Insects.—Egypt presents two different regions from an entomological point of view: (1) the valley of the Nile irrigated by numerous canals which permit an intensive agriculture and which is favored by winter and spring rains in its northern part; (2) a desert region which receives only a little rain in winter which hardly suffices to produce a spontaneous vegetation in spring. It results from these special conditions that the Lepidoptera which inhabit the Delta, or the Valley, of the Nile produce several generations in the year, while those of the desert can propagate by only a single annual generation. Thus the butterflies most commonly seen in Egypt, such as *Pieris rapae*, *Vanessa cardui* and others which live in the fields and cultivated lands of the Delta, have several generations each year and the imagos are seen in all

seasons. On the other hand, *Anthocharis belia*, of the desert fauna, has but one generation, flies in the spring, and often the chrysalid transforms into a butterfly only at the end of two years of hibernation. By hibernation is to be understood in Egypt not that state of torpor produced by cold, but the phase of inactivity which can appear at any season, in summer as well as in winter, summer offering, in the desert, the same conditions of aridity as winter in cold countries. This phase of torpor can appear in the different states of the life-cycle of Lepidoptera, as the egg, the caterpillar (*Agrotis nili, A. ypsilon*), the chrysalid (*Prodenia littoralis, Anthocharis belia*), or the imago (*Prodenia littoralis*). The duration of each generation is subordinated to the more or less favorable conditions for its development which the insect meets at different seasons of the year.—(A. Andres, *Bull. Soc. Entom. d'Egypte*, 1910, pp. 89-96, 1911.)

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), excluding Arachnida and Myriapoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted. This (*) following a record, denotes that the paper in question contains description of a new North American form.

For record of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington.

2—Transactions, American Entomological Society, Philadelphia, **3**—The American Naturalist. **4**—The Canadian Entomologist. **7**—U. S. Department of Agriculture, Bureau of Entomology. **8**—The Entomologist's Monthly Magazine, London. **9**—The Entomologist, London. **11**—Annals and Magazine of Natural History, London. **18**—Ottawa Naturalist. **21**—The Entomologist's Record, London. **22**—Zoologischer Anzeiger, Leipzig. **35**—Annales, Societe Entomologique de Belgique. **38**—Wiener Entomologische Zeitung. **40**—Societas Entomologica, Zurich. **47**—The Zoologist, London. **49**—Annales historico-naturales Musei Nationalis Hungarici, Budapest. **89**—Zoologische Jahrbucher, Jena. **94**—"Das Thierreich" herausgegeben von d. Deutschen zoologischen Gesellschaft, Berlin. **102**—Proceedings, Entomological Society of Washington. **119**—Archiv fur Naturgeschichte, Berlin. **152**—California Agricultural Experi-

ment Station, Berkeley. **153**—Bulletin, American Museum of Natural History, New York. **166**—Internationale Entomologische Zeitschrift, Guben. **169**—"Redia," R. Stazione di entomologia Agraria in Firenze. **173**—Die Grossschmetterlinge der Erde, von A. Seitz, Stuttgart. **176**—Archiv fur entwicklungsmechanik der Organismen, Leipzig. **180**—Annals, Entomological Society of America. **191**—Natur, Munchen. **200**—Bulletin Scientifique de la France et de la Belgique, Paris. **208**—Boletin, Real Sociedad Espanola de Historia Natural, Madrid. **281**—Annals of Tropical Medicine and Parasitology, University of Liverpool, Series T. M. **289**—Kansas University Science Bulletin, Lawrence. **310**—L'Echange Revue Linneene, Moulins. **324**—Journal of Animal Behavior, Cambridge, Mass. **344**—U. S. Department of Agriculture, Washington, D. C. **362**—Bulletin of the Pan-American Union, Washington, D. C. **363**—Schriften herausgegeben von der Naturforschenden-Gesellschaft bei der Universitat Jurjew (Dorpat). **364**—Biologica Journal Scientifique du Medecin, Paris. **365**—Collections Zoologiques du Baron Edm. de Selys Lonchamps, Bruxelles. **366**—Palaeontographica beitraege zur Naturgeschichte der Vorzeit, Stuttgart. **367**—International Entomological Congress. **368**—The Monthly Bulletin of the State Commission of Horticulture, Sacramento, Cal. **369**—Entomologische Mitteilungen, Berlin-Dahlen. **370**—Behavior Monographs, Boston, Mass.

GENERAL SUBJECTS. Coquillett, D. W.—Obituary notice and list of writings; **102,** xiii, 196-210. **Dixey, F. A.**—Mimicry; **367,** ii, 369-384. **Handlirsch, A.**—Ueber fossile insekten; **367,** ii, 177-184. **Holland, W. J.**—The conservation of types; **367,** ii, 361-368. **Howlett, F. M.**—A note on methods of preserving insects in tropical climates; **367,** ii, 357-360. **Imhof, P. D. E.**—Kleine ergebnisse; **367,** ii, 257-264. **John, O.**—Some more considerations about descriptions and figures; **21,** 1911, 318-319. **Klages, E. A.**—The entomological writings of John Hamilton, M. D.; **2,** xxxviii, 361-367. **Lyman, H. H.**—Variation in the use of certain scientific terms and changes in the spelling of scientific names; **367,** ii, 423-424. **Maxwell-Lefroy & Howlett.**—Progress of economic entomology in India; **367,** ii, 465-482. **Merrifield, F.**—Experimental entomology. Factors in seasonal dimorphism; **367,** ii, 433-448. **Navas, R. P. L.**—Algunos organos de las alas de los insectos; **367,** ii, 69-78. **Olivier, E.**—Les accouplements anormaux ches las insectes; **367,** ii, 143-144. **Perez, T. deS.**—Notizie preventive e informazioni sulla "Sphenoptera lineata" e la larva di un Lepidottero che attaccano la sulla (Hedysarum coronarium) della Tunisia e della Sicilia; **367,** ii, 184-194. **Rabaud, E.**—Le peuplement des cavernes et le comportement des

etres vivants; **364,** i, 389-394. **Reinick, W. R.**—Insects destructive to books (Reprint); **40,** xxvii, 3-6 (cont.). **Reitter, E.**—Protest gegen einen neuen missbrauch in der nomenklatur; **38,** xxx, 293-294. **Roeschke, H.**—Bibliographische studien. Ueber Panzer's "Fauna Insectorum Germanica"; **369,** i, 29-31. **Schaus, W.**—A quoi sert le mimetisme? **367,** ii, 295-304. **Schenkling, S.**—Zur entomologischen nomenklatur; **369,** i, 21-26. **Skinner, H.**—One hundred years of entomology in the United States; **367,** ii, 425-432. **Speiser, P.**—Der begriff der gattung in der heutigen systematik; **367,** ii, 105-112. **Strand, E.**—Drei neue gattungsnamen in Arthropoda. Neuer name einer Braconide; **166,** vi, 287, 291. **Torne, O.**—Untersuchungen uber die insertion der muskeln am chitinskelett bei insekten (Russian); **363,** 1911, 94 pp., 2 pls. **Urich, F. W.**—Economic entomology in Trinidad; **367,** ii, 509-515. **Worsham, E. L.**—Bulletin No. 35. Georgia State Board of Entomology. **Xambeu.**—Moeurs et metamorphoses d'insectes; **310,** 1911.

APTERA AND NEUROPTERA. Bagnall, R. S.—Preliminary notes on the importance of the new family "Urothripidae" in the study of the "Thysanoptera"; **367,** ii, 283-288. **Enderlein, G.**—Die fossilen Copeognathen und ihre phylogenie; **366,** lviii, 279-365. **Leue, F. W.**—Beitrage zur kenntniss der Ephemeriden. Untersuchungen uber die larve von Heptagenia sulphurea; **191,** 1911, 1 Bd. 3 Sup., 202-231. **Merrill, G. E.**—The white fly (Aleyrodes citri) in California; **368,** i, 14-15. **Ris.**—Libellulinen. Catalogue systematique et descriptif; **365,** fasc. xiii, 529-700. **Russell, H. M.**—A true internal parasite of Thysanoptera; **102,** xiii, 235-238. **Theobald, F. V.**—"Springtails" (Collembola). Their economic importance, with notes on some unrecorded instances of damage; **367,** ii, 1-18. **Wodsedalek, J. E.**—Formation of associations in the may-fly nymph Heptagenia interpunctata; **324,** ii, 1-19.

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H.—Notes on distribution and ecology of N. A. Jassidae; **367,** ii, 235-236. **Quayle, H. J.**—The red or orange scale (Chrysomphalus aurantii); **152,** Bull. No. 222. **Severin & Severin.**—An experimental study on the death-feigning of Belostoma flumineum and Nepa apiculata; **370,** No. 3, 47 pp. **Teodoro, G.**—La secrezione della Cera nei maschi della Pulvinaria camelecola; **169,** vii, 352-361. **De la Torre Bueno, J. R.**—On Merragata lacunifera; **4,** 1912, 31-32.

LEPIDOPTERA. Anon.—Argentine plains and Andine glaciers; with a description of the South American locust; **362,** 1911, 1082-1094. **Andres, A.**—Bemerkungen ueber die den baumwollpflanzen in Egypten schadlichen schmetterlinge und ueber die methoden sie zu vertilgen; **367,** ii, 317-320. **Barnes & McDunnough.**—Contributions to the natural history of the Lepidoptera of No. Am., vol. 1, Nos. 1-2. Revision of the Cossidae. The Lasiocampid genus Gloveria and its allies. Decatur, Ill. The Review Press. New species and genera of N. A. Lepidoptera; **4,** 1912, 17-22 (cont.). **Bryk, F.**—Sonderbare lebensgeschichte eines sonderlings; **191,** 1912, 163-166. **Closs, A.**—Einige neue aberrationen aus meiner sphingidensammlung; **166,** xxvii, 275-276. **Croft, E. O.**—A Notodontid attacked by a wasp; **8,** 1912, 13. **Crosby, C. R.**—Notes on the life history of Nepticula slingerlandella; **4,** 1912, 25-27. **Dewitz, I.**—Recherches physiologiques sur la coloration des cocons de certains Lepidopteres; **367,** ii, 133-136. **Dognin, P.**—Heteroceres nouveaux de l'Amerique du Sud. Fasc. IV. Imprimerie Oberthur, Rennes; 32 pp., 1911. **Dyar, H. G.**—Descriptions of the larvae of some Mexican Lepidoptera; **102,** xiii, 227-232. **E. G.**—Sexe et regeneration a propos des ailes d'un papillon; **364,** i, 408-410. **Hampson, G. F.**—Descriptions of n. sp. of Pyralidae of the subfamily Pyraustinae; **11,** ix, 149-174 (cont.). **Hasebrock, K.**—Ueber die einwirkung der rontgenstrahlen auf die entwicklung der schmetterlinge; **367,** ii, 195-198. **Jordan, K.**—The systematics of some Lepidoptera which resemble each other, and their bearing on general questions of evolution; **367,** ii, 385-404. **Kleine, R.**—Die schmetterlinge unserer heimat ihre entwicklung und ihr leben. Theo. Thomas, Leipzig, 95 pp., illus. **Kopee, S.**—Untersuchungen ueber kastration und transplantation bei schmetterlingen; **176,** xxxiii, 1-116. **Kosminsky, P.**—Einwirkung ausserer einflusse auf schmetterlinge. III. Veranderungen an den copulationsorganen unter dem einflusse von kalte; **89,** xxxi, 297-302. **Oberthur, C.**—Etudes de lepidopterologie comparee. Fasc. V, pt. 1-2, pp. 1-346, 1-136. **Poulton, E. B.**—On Dr. C. A. Wiggins' researches on mimicry in the forest butterflies of Uganda (1909); **367,** ii, 483-508. **Riley, C. V.**—Description of the larva of "Monoleuca semifascia"

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COLEOPTERA. Bondroit, J.—Note sur les genres Pteroloma et Apatetica; **35,** lv, 365-369. **Champion, G. C.**—Biologia Centrali-Americana. Vol. IV, pt. 3, 313-354 (*). **Cook, A. J.**—The alfalfa leaf-weevil (Phytonomus murinus). An alarming menace; **368,** i, 19-22. **Deville, J. S. C.**—De l'utilisation des insectes et particulierement des Coleopteres dans les questions de zoogeographie; **367,** ii, 305-312. **Fuchs, G.**—Morphologische studien ueber borkenkafer. I. Die gattungen Ips, und Pityogenes. Munchen, p. 1-45. **Heikertinger, F.**—Zur praxis des kaferfanges mit dem katscher; **38,** xxx, 247-261. **Hopkins, A. D.**—The dying of pine in the Southern

states: cause, extent, and remedy; **344,** Farmers Bull. No. 476. **Horn, W.**—Ueber zweigbewohnende Cicindelinenlarven und ihre entdeckung in Brasilien durch Herrn Jos. Zikau; **367,** ii, 173-176. Die "Weddabrucke"; **367,** ii, 313-316. **Kolbe, H.**—Die vergleichende morphologie und systematik der Coleopteren; **367,** ii, 41-68. **Normand, H.**—Description d'un nouveau procede de captur des Coleopteres hypoges; **310,** 1911, 114-116, 124-126. **Olivier, E.**—Contribution a l'histoire des Lampyrides; **367,** ii, 273-282. **Pic, M.**—Diagnoses preliminaires de 30 Coleopteres exotiques; **310,** 1911, 122-124. Coleopteres exotiques nouveaux ou peu connus; **310,** 1911, 99, 117, 127, 132, 142, 149, 155, 164, 172, 181. **Swaine, J. M.**—The engraver beetles (Family Ipidae), Popular Entomology; **18,** xxv, 141-145 (cont.). **Titus, E. G.**—The genera Hypera and Phytonomus in America, north of Mexico; **180,** iv, 383-473 (*). **Wagner, H.**—Zur katschertechnik; **38,** xxx, 263-268. **Waterhouse, C. O.**—Observations on Coleoptera of the family Buprestidae, with descriptions of n. sp.; **11,** ix, 57-63 (cont.).

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ii, 449-464. **Nixon, S. D.**—Notes on Apantesis figurata; **102,** xiii, 232. **Rohwer, S. A.**—A note on a genus of Tenthredinidae (Eniscia); **102,** xiii, 214. A classification of the suborder Chalastogaster of the Hymenoptera; **102,** xiii, 215-226. A preoccupied name in Sphecoidea; **102,** xiii, 234. The synonymy of a Thynnid genus; **102,** xiii, 240. **Schulz, W. A.**—Systematische uebersicht der Monomachiden; **367,** ii, 405-422. **Wasmann, E.**—Die anpassungsmerkmale der Atemeles, mit einer uebersicht ueber die mitteleuropaischen verwandten von "Atemeles paradoxus"; **367,** ii, 265-272, Die ameisen und ihre gaste; **367,** ii, 209-234.

In Memory of Dr. Henry C. McCook.—The *Journal of The Presbyterian Historical Society* for December, 1911 (Vol. VI, No. 4—Philadelphia) is a "McCook Memorial Number." It contains various addresses delivered at his funeral and at a Memorial Service held in the church of which he was formerly pastor, Nov. 12, 1911. One of the latter series is by Dr. Henry Skinner on Dr. McCook's entomological work (pp. 115-121). De Benneville K. Ludwig, Ph.D., contributes a "List of the Writings of Dr. McCook" (pp. 137-140) which includes 25 titles on Ants, 7 on other Insects and 31 on Spiders. On page 145 is the statement that it was Dr. McCook's request that his scientific collection should go to the Academy of Natural Sciences.

Doings of Societies.

ENTOMOLOGICAL SECTION, ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

Meeting of September 28th, 1911, Mr. Philip Laurent, Director, presiding. Fourteen persons present; Mr. R. D. Glasgow, of Urbana, Ill., and Mr. H. A. Wenzel, of Philadelphia, visitors.

Mr. Glasgow made some remarks on the genus *Lachnosterna,* and said Prof. Forbes had been studying the species from an economic standpoint. Large collections had been made (150,000 to 200,000 specimens) with a view of finding out the food plants and the relation of the species to soils and soil conditions.

Dr. Calvert spoke of some observations made by Dr. Ris, of Rheinau, Switzerland, on the pairing of *Anax.* He could tell when the female had been in coitu without having seen the individuals in this condition by the scratches made by

the inferior abdominal appendage of the male on the eyes of the female. The speaker said these scratches could be seen on the eyes of our common *Anax junius.*

Mr. Wenzel said in *Macrodactylus* the pubescence on the abdominal segments of the female is rubbed off by the male if copulation has taken place.

Mr. H. A. Wenzel read an interesting account of his recent trip to the Great Bend of the Rio Grande in southern Texas.

Mr. Rehn spoke of the difficulties of desert collecting, the conditions in the mountains being far less trying.

Dr. Skinner exhibited specimens of *Adelpha bredowi* and *californica* and gave characters to separate the two.

Mr. H. W. Wenzel compared the faunas of the Huachuca Mts. in Arizona and Southern Texas, and said that so far as the Coleoptera were concerned there was very little similarity. He mentioned the different families, genera and species that bore out his conclusion.

Mr. Rehn made some remarks on a recent Orthoptera-collecting trip made with Mr. Morgan Hebard through the greater portion of the coastal plain of the southeastern States. The time spent in the field covered from Aug. 24th to Sept. 10th. The chief object of the work was to secure information concerning the northern limits of numerous Austroriparian species and twenty localities extending from Northern Florida to Southeastern North Carolina were examined. A series of fifty-five hundred Orthoptera and much valuable field information on the same were secured. A number of species taken were little known and some are without doubt new.

Dr. Skinner mentioned the immense flight of *Aletia argillacea* that had taken place in Philadelphia during the week. Mr. Haimbach exhibited specimens which, when he had mounted them, seemed dry and brittle. This was not the case with some other species he had taken at light at the same time, among which was *Feltia gladiaria.* He also spoke of a big flight of *argillacea* he saw in St. Louis in October

during the great fair held there a few years ago. Mr. Laurent said he had often found *argillacea* at Anglesea, N. J., about Sept. 20th. He also mentioned a large flight of *Tortrix fervidana* he had witnessed 25 years ago at 10th and Spring Garden Sts., Philadelphia.

Meeting of November 23rd, 1911, Mr. Philip Laurent, Director, presided. Seven persons were present.

Dr. Calvert read a biography of the late Dr. McCook, which appeared in ENTOMOLOGICAL NEWS for December, 1911.

Dr. Skinner exhibited a variety of *Satyrus alope* taken at Southern Pines, N. C., by Mr. F. M. Jones. Mr. Rehn said this locality disclosed intergrades between northern and southern species.

Meeting of December 11th, 1911, Mr. Philip Laurent, Director, occupied the Chair. Ten persons were present.

Mr. Rehn made some remarks describing the Lawrence Bruner collection of Orthoptera, purchased by Mr. Morgan Hebard and now on deposit in the Academy.

Dr. Calvert referred to some Odonata collected by Mr. C. S. Williamson in Newfoundland and said one species, *Enallagma civile* had not hitherto been found so far north, although it has a wide range.

Mr. Wenzel exhibited some Bruchids from Texas. *Bruchus julianus* was said by Mr. Fall to be very variable in size. Mr. H. A. Wenzel collected a number of specimens in Texas from Fort Davis to the Chisos Mountains which were typical *julianus*. The Brownsville species is not *julianus,* but a new one. The small species, *julianus,* does not vary and it is found on the ground. A species of *Lebia* found in the desert in Texas had been described from the Huachuca Mountains of Arizona by Schaeffer. It is not a variety of *viridis*.

He also stated that *Exochomus scaphinus,* taken by H. A. Wenzel in the Huachuca Mountains is a Mexican species and not hitherto recorded in the United States.

The following persons were elected to serve as officers for the year 1912: Director, Philip Laurent; Vice Director, H. W. Wenzel; Treasurer, E. T. Cresson; Conservator, Henry Skinner; Secretary, J. A. G. Rehn; Recorder, Henry Skinner; Publication Committee, E. T. Cresson, E. T. Cresson, Jr.

HENRY SKINNER, *Recorder.*

FELDMAN COLLECTING SOCIAL.

Meeting of October 18th, 1911, at the home of Dr. Skinner, Glenn Road, Ardmore, Pa. Thirteen members were present. President Haimbach in the Chair.

Dr. Skinner exhibited leaf stems from large hickory trees on a lawn here in Ardmore that had been attacked at the base (of the stems) by an insect presumably a beetle or micro-moth. Also sections of the bark, the back of which was badly marked by Scolytids and Buprestids, and which contained living larvæ of both, and some dead imagoes of the former in too poor a state for determination but most likely *Scolytus quadri-spinosus* Say.

Prof. Calvert read a clipping from a Milwaukee paper quoted from the New York *Times* mentioning live insects found in solid rock by a mine or quarry superintendent two hundred feet below the surface, at Marysvale (State not given).

Mr. Daecke recorded the following Diptera: *Nusa fulvicauda* and *Lampria bicolor* Wied., both collected at Hunter's Run, Pa. VII-23-'11, saying he would exhibit the species at the next meeting.

Mr. Harbeck exhibited a species of *Mixogaster* which he took thinking it was a Hymenopter, but upon examination it turned out to be a Dipteron; collected at Manahawkin, N. J.

Mr. C. T. Greene exhibited and recorded the following Conopidæ (Dip.), all collected by himself and determined by Mr. Banks: *Zodion perlongum* Coq., Broomall, Pa., Sept. 18, 1910 (Aldrich's List records it from Mex., N. M. and Col.);

Z. intermedium Banks, Pocono Lake, Pa., July 11, 1911, Malaga, N. J., Sept. 15, 1907, and *Physocephala furcillata* Will., Pocono Lake, Pa., July 10, 1911.

Mr. H. W. Wenzel exhibited *Allorhina mutabilis* Gory (Col.); four from Florence, Ariz., and five from Davis Mts., Tex., only one of the latter having the elytra nearly covered with the green coloring as in those from Arizona. The Texas specimens were collected by H. A. Wenzel in July on "grease wood" in open fields. Prof. Calvert stated he had collected this species in Chihuahua, Mexico, in August.

Prof. Calvert said he had collected eggs of the 17-year Cicada between Almonesson and Blackwood, New Jersey, in twigs, and had hung some twigs up and placed others in water, putting white cloth beneath each to render visible any larvae which might hatch, but had waited six or seven weeks with no result, as all seemed to have dried up. This led to a discussion on the species.

Meeting of November 15th, 1911, at the new Zoological Laboratory of the University of Pennsylvania. Fifteen members and sixteen invited guests were present. President Haimbach in the Chair.

The death of James H. B. Bland, the first president of the Social, was announced as having occurred on the 12th.

Prof. Calvert said he was exceedingly glad the Social had accepted his invitation to hold this meeting in the Laboratory, and hoped it would not be the last; and was glad that his colleagues on the teaching staff were also there to welcome us. He mentioned the different classes and branches of study carried on in the laboratory.

Dr. Skinner remarked on the new building, and said it was very different from the time when he attended college here thirty years ago, as then there were few buildings, and only two men he knew of at that time interested in Entomology, Drs. Joseph Leidy and Harrison Allen. He spoke of the ignorance of physicians in relation to Entomology and cited cases. He described the manner devised by E. T. Cres-

son, Jr., in which the collection of the American Entomological Society was lately moved.

Mr. Wenzel, Sr., exhibited two boxes of Coleoptera containing *Pachybrachys,* Bruchids, Buprestids, Clerids and Carabids collected by Mr. Wenzel, Jr., in Southwest Texas, and said they contained many which were new. He had gotten the first named genus in readiness for Prof. Fall, who is to monograph this group.

Mr. Daecke exhibited galls of *Eurosta elsa* Daecke (Dip.), and said they were almost the same as *E. comma* Wied., but they were found on the roots of a different species of golden rod. He also exhibited the Diptera recorded at the last meeting and three specimens of *Polypleurus perforatus* Germ. (Col.) from Manumuskin, N. J., April 24, 1900, Linglestown, Pa., November 30, 1908, and Rockville, Pa., March 27, 1910, all having been compared with the Horn collection, and found to be determined correctly. The first was the only one collected by himself, and was exhibited to refute the statement on p. 358 of the 1910 New Jersey List: "It may be that this record really refers to the preceding" (*geminatus* Sol.)

Mr. C. T. Greene exhibited *Rhamphomyia gracilis* Loew (Dip.), Pocono Lake, Pa., July 12, 1911, collected by himself.

Mr. Harbeck exhibited a *Tabanus* of which he had caught several at shore in company with *lineola* Fabr., *costalis* Wied. and *nigrovittatus* Macq., and which is most likely a new species. This one was taken at Manumuskin, N. J., July 4, 1909, and he said that by sweeping the net about the head hundreds of specimens of the other species could be taken. Mr. Daecke said by glancing at *Tabanus,* one of the most interesting characters would not be noted, that is the maculations of the eyes—this one has three fine green stripes.

Prof. Calvert in continuation of his communication of last meeting on the 17-year Cicada said that where the twigs were found no chimneys were to be seen. This was June 19th. Females were more abundant than the males. Two females were particularly mentioned as displaying extreme vitality.

One fell to the ground from some distance up in a tree and began crawling, and when picked up the entire abdomen was missing, most likely cut off by a bird; five hours later it could still crawl, cling to a finger and flutter its wings, but could not right itself when placed upon its back. One caught in the net while flying had a large cavity in end of the abdomen, ovipositor and muscles were lacking; this lived at least twenty-two hours later, for at that time it was crawling and fluttering about a room in which it had been liberated. Dr. Skinner wanted to know if anyone had theories as to when the Cicadas do or do not make the chimneys. Mr. Wenzel said they seemed to make more in wet seasons than dry. Mr. Hornig said he had seen them very numerous in one spot, about fourteen or sixteen in a square foot near Glassboro, New Jersey. General discussion.

After refreshments were served the members were shown over the building by those in charge of the various departments.

Meeting of December 20th, 1911, at 1523 S. 13th St., Philadelphia. Twelve members were present. Vice-President Wenzel in the Chair.

Mr. Daecke said that the vitality was so great in certain insects that the cyanide was a long time affecting them, but if tobacco smoke was blown in the bottle the combination of the two fumes would kill almost immediately. *Trogosita virescens* Fabr. (Col.), was specially mentioned as after being in the bottle 36 hours and then pinned, found to be alive several days later. Exhibited 9 specimens of *Cosymbia culicaria* Gn. (Lep.), from the following localities in New Jersey: Browns Mills, April 29, 1906, May 19, 1907, May 21, 1904, July 4, 1907; Da Costa, May 17, 1903, and Clementon, May 17, 1901.

Mr. C. T. Greene exhibited *Blepharocera tenuipes* Walker (Dip.), collected by himself at Castle Rock, Pa., June 19, 1910, as new to this locality. Osten Sacken's Catalog records Axton and Ithaca, N. Y., and White Mts., N. H.

Dr. Castle exhibited a specimen of *Calopteron reticulatum* Fabr. from Glenolden, Pa., June 2, being nearly all black, except small humeral spots and a narrow band across the middle of the elytra.

Mr. Wenzel, Sr., exhibited the weevils collected in Southwestern Texas by Mr. Wenzel, Jr., in 1911.

Adjourned to the annex.

GEO. M. GREENE, *Secretary*.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued

For Exchange—350 species of Coleoptera for native or exotic specimens new to my collection. List on application.—Emil Liljeblad, 1018 Roscoe St., Chicago, Ill.

Semiophora tenebrifera, *Choephora fungorum* and many other desirable species of Nocturnal Lepidoptera offered for exchange.—Fred. Marloff, Oak Station P. O., Allegheny Co., Pa.

Lepidoptera—I have for exchange *Catocala nubilis, elonympha, gracilis, grynea, ultronia, cerogama, ilia* and var. *uxor, unijuga, cara, antinympha, paleogama, neogama* and var. *snowiana, piatrix* and *epione.* Desire other Catocalae.—John H. West, 2229 N. Mascher Street, Phila., Pa.

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